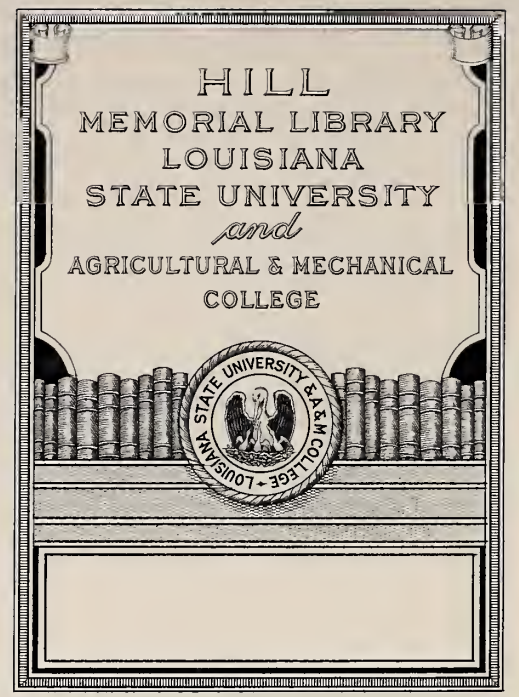
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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against Foreign Competition

Vol. 23 NEW ORLEANS, LA., OCTOBER 1, 1944 No. 1

Annual Address of President J. J. Shaffer, Jr.

Today marks the end of the twenty-second fiscal year of the American Sugar Cane League. Several events of importance have transpired including some new conditions never before present (i. e.) Prisoners of war working in the cane fields—incentive payments made to growers in order to stimulate production—participation by the League in the increase of new varieties of seed cane produced by the U. S. Department of Agriculture, and the commercial manufacture and use of flame cultivating machines for the control of grass in growing crops.

The successful harvesting of the large crop of 1943 is without doubt the most important accomplishment of the past fiscal year, closely followed by the making of another good crop for the current year 1944. The 1943 production of 431,900 tons of sugar is particularly noteworthy because it was an increase of approximately 10% over the previous year at a time when all other domestic sugar areas were undergoing a material decrease in sugar production. It was a patriotic and splendid response to the call of our Government for more sugar—an accomplishment in which the entire Louisiana sugar industry may take just pride.

If the current crop can be harvested without undue loss it will represent another achievement in overcoming difficulties. Labor is more critical. Farm machinery and materials, fertilizer and truck tires have been harder to get than ever before.

The Industry has been active in taking advantage of measures to decrease field costs and to make the small amount of labor more effective. Mechanization of all activities both in cultivation and harvesting has made amazing progress. Last year approximately one-third of the total crop was harvested mechanically and this year promises a considerably larger percentage. The controlling of grass and weeds in young growing crops by flame was introduced on a commercial scale for the first time this year. The general opinion is that the idea has great promise. All new farm machinery, however, has been extremely scarce and difficult if not impossible to get in adequate quantities.

In addition to the extreme scarcity of almost all basic necessities with which the cane grower and processor have had to contend during the past year the Official Releases or Directives issued by the Bureaus of the U. S. Government for the especial guidance and implementation of the Louisiana sugar industry were 41 in number, aside from some that may be considered echoes of each other, and which were issued in case we didn't hear them the first time.

This fact illustrates, as nothing else could, how we are now shepherded in the conduct of our business. "Shepherded" is a good word to use in this connection as it implies a benevolent interest in our welfare, and indicates good intentions towards an industry that is able to look back on some ten or more decades during which it went along barking its shins too frequently for its own comfort and satisfaction. With such a large number of rules and regulations to consider it is obvious that they cannot be commented on individually in the course of the few remarks that it is customary for the President of the League to make at the Annual Meeting, and anyway, because of the source from which they came, all our members have had to familiarize themselves with them and abide by them.

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

Marcel J. Voorhies, Editor

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in which are consolidated

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.

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There are many other developments, however, in which the American Sugar Cane League has taken action on its own initiative and it is proper and fitting for me to make a brief reference to some of them.

One of the most important of the regulations under which the Louisiana sugarcane and sugar producers have had to operate during the past year has had to do with priorities, which affect the ability of our members to procure things they need in time for a useful purpose to be served. This necessity led to the appointment of a League group of seven members entitled "The Committee on Priorities" and this Committee established close working contacts with the War Production Board and the War Food Administration. It has been splendid and tireless in its work, carried on largely through our Washington office. It conducted extensive surveys through our New Orleans office and it achieved what, in some cases, seemed to be almost impossible at the outset. The Committee on Priorities was able to have provisions made by the War Production Board for the necessary supply of materials for maintenance and repairs in both fields and factories and there were many special cases in which its efforts won success along lines that saved the Louisiana sugar industry as a whole from serious consequences.

Another Committee called the Raw Sugar Committee, composed of nine members, foresaw the congestion of off-shore raw sugar in the New Orleans area which would have seriously hampered the normal movement of Louisiana raw sugar to refiners. Every producer of sugarcane would have been adversely affected if such a condition had been allowed to develop. The average season price for raw sugar cannot be maintained at the maximum ceiling if too much off-shore sugar is imported into New Orleans and Galveston during the grinding season. Proper contacts with the War Food Administration and the War Shipping Administration were made and relief is being worked out.

It is certainly appropriate for me to comment on this occasion on the subject of labor. The League has a Labor Committee, which is composed of nine sugar cane producers and processors and this Committee is responsible for starting the use of prisoners of war on the farms in Louisiana. The Committee has cooperated with the Army and the Agricultural Extension Staff of the University and has contributed substantially to the relief afforded the Industry in attempting to solve its critical farm labor problems. The Committee is now working very hard to increase the labor supply for grinding. The number of prisoners of war is increasing now by leaps and bounds and everybody, in and out of the sugar industry, is interested and happy over that.

Our Contact Committee is composed of thirteen farmers and processors and meets regularly with the Technical Personnel of the Houma Federal Experiment Station and the Louisiana State Agricultural Experiment Station to discuss the seed cane development work as well as the cultural and insect or disease control work being carried on or proposed. At the suggestion of the Contact Committee and the two Experiment Stations, it was decided this year to devote more direct supervision to the Primary and Secondary Seed Cane Stations. Mr. Edward P. Munson was employed by the American Sugar Cane League to perform that service. Mr. Munson is a sugarcane farmer of long practical experience and is making a real contribution to the efforts of the

League to hasten the propagation of promising unreleased sugarcane varieties so that they may be released sooner for commercial production, with an ample supply of seed available for farmers in all localities of the sugar area. Mr. Munson also serves as a contact man in the field to explain personally to as many producers as possible the League's activities in behalf of the Louisiana Sugar Industry. This is a splendid move for the benefit of all producers of sugar cane. It indicates wisdom, understanding and helpfulness. We have every reason to hope and expect that in good time this most important work will be increased and expanded to the fullest extent possible.

We are deeply interested in the matter of fertilizers. We have to have enough fertilizer, of the right sort —and at the right time—or we will be practically put out of business. As early as September 1943 our Washington Manager, Mr. C. J. Bourg, began contacts with the Fertilizer Units of the War Food Administration and the War Production Board. It was possible, after long and persistent efforts, to have 20,000 tons of Cyanamid allocated to Louisiana sugarcane. The total tonnage was contracted for by Louisiana producers. Because of unrelenting efforts by our Washington representative, 15,000 tons were delivered prior to April 15th, and the remaining 5,000 tons were delivered prior to May 1st, 1944. Despite war restrictions, the fertilizer requirements of the Louisiana sugar industry were fully met. Things do not just happen, they are brought about! And in this instance, the special organized efforts of the League produced desired results. The Cyanamid Company advises that 17,000 tons of Cyanamid have been set aside for Louisiana sugar for 1945.

And now we come to another all important subject—price! The hold-the-line order of the President has made it extremely difficult, if not impossible, to obtain an increase in the price of sugar. The League has constantly reminded Government officials of the necessity for permitting growers to receive a fair price for sugar cane and processors to receive a fair price for sugar if they are to produce the sugar needed in the war effort. Instead of a market price increase, the League has succeeded in getting the producers an incentive of 33c per ton of cane on the 1943 crop, of 85c on the 1944 crop, and a commitment for $1.60 on the 1945 crop. Only recently, the Office of Price Administration established a uniform price for refined sugar at $5.50 thereby removing a discrimination against southern refiners. OPA also made the raw sugar price uniform at $3.75. The Cubans are demanding an increase in the price of raw sugar and the League is following the negotiations very closely to make sure that any increase in revenue to producers of sugar in one area, whether foreign or domestic, shall be also given to the producers on the mainland. Keeping up with these matters requires constant vigilance.

The above recital does not include all of the activities of the League in behalf of its members but the outline demonstrates how the League is working for its members day in and day out, often without their knowledge.

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In mentioning all the above accomplishments of the League, which as its President I have been in a position to closely observe, I have not done much more than mark a few important things. Members of our Executive Committee and of all the standing Committees, whether mentioned by name in this report or not, deserve our thanks and congratulations.

It would not be right and proper to make any report on the work and accomplishments of the American Sugar Cane League during the past year without pointing out specifically the splendid and capable men who are employed by the League and who are in large measure responsible for its activities and progress. The Louisiana Sugar Industry is more fortunate than they know. As President of the American Sugar Cane League I wish to express to them my personal thanks and gratitude as well as that of the industry for their tireless work, courage, ability and loyalty. It has been a pleasure to serve with them and without their splendid work any President would be lost.

In closing this brief report to the members of the American Sugar Cane League may I express the thanks and appreciation of the Louisiana Sugar Industry to all individuals who have channeled their thoughts and actions through the League, so that their Organization could speak with one united voice. Such unity has been a tower of strength, in fighting their battles and expressing their desires.

Parity Policies of Congress

By C. J. Bourg

Your Washington Representative has been asked several times about the laws passed by Congress to guarantee parity to farmers during the war and for at least two years thereafter. In view of this evidence of general interest, it seems appropriate to brief a discussion by Mr. Robert H. Shields, Solicitor, War Food Administration, before a meeting of Regional Attorneys on the Federal Statutory Provisions relaing to price support for agricultural commodities contained in Section 8 of the Stabilization Act of 1942, 56 Stat. 767 (1942), 50 U. S. C. App. § 968 (Supp. III), as amended by the Stabilization Extension Act of 1944, Pub. L. No. 383, 78th Cong., 2nd Sess. (June 30, 1944). Mr. Shields will be remembered as a presiding officer at several of the public hearings in Louisiana held under the Sugar Act.

Under the Stabilization Extension Act, the farm prices of *basic* commodities are required to be supported by producer loans at 90% of parity (except for cotton which is at 92½% of parity). These loans must be continued for at least two years after the war. In the case of commodities which now enjoy a price support program, the Act "provides for price support at not less than the 90% of the parity or *Comparable price level*". Mr. Shields suggests it be noted "that it (the Act) does not fix the level, as does the loan legislation with respect to the basic commodities". In effect, that Act establishes only a floor below which a support program may not operate and leaves the way open for price support at a higher level, if such action is necessary, *to get needed production*. Mr. Shields pointed out that the requirement with respect to "price supports for agricultural commodities can be effective only within the limits of available funds." He adds: "it will be seen, therefore, that the extent to which price support operations are carried out after the war will depend largely upon the extent to which funds are supplied by the Congress. In view of the fact that the Congress has by law assured farmers of continued price support, there is no reason to doubt that funds will be forthcoming."

The application of the Stabilization Extension Act to a "comparable price level" for sugar war specifically mentioned by Mr. Shields when he said: "price support programs for certain of these commodities are being carried out. These include programs for * * * sugar beets, sugarcane * * *. These price supports range from about 99% of parity in the case of the loan program for naval stores to about 130% of parity in the case of sugar beets".

He further mentions that "in the case of sugar beets and sugarcane, there is a statutory provision in the Sugar Act of 1937, as amended, for marketing quotas and allotments and for conditional payments to producers".

Viewed from the standpoint of your Washington representative, this Act of Congress definitely applies to protect a support price for sugarcane for at least two years after peace is declared. Only recently, the WFA announced programs reducing the acreage goals for crops of which there is a surplus. The present statistical position of sugar leads to the conclusion that unlimited production of sugar within the Continental United States will definitely be necessary in 1945 and 1946. As to years beyond that, much depends upon when the wars end in Europe and in the Pacific. At least, we know that there is legal provision showing Congressional intent for the maintenance of a support price at a comparable parity price level for sugarcane, in addition to the apparent market need for maximum production.

As of September 1944 the parity price of sugarcane is $6.01 which is computed by multiplying the base period price of $3.72 by the parity index of 170.

Annual Sugarcane Field Day Held

The Annual Sugar Cane Field Day was conducted at L. S. U. on Tuesday, September 19. In spite of the fact that we are now in the midst of the fall planting season a very large attendance was present and all of the Louisiana sugar producing parishes were represented.

The usual custom of gathering visitors into groups in wagons and making systematic rounds of the sugar cane experimental plots was carried out, each wagon being accompanied by a representative of the Experiment Station fully versed with the work who explained all details to those present.

Mr. Harold T. Barr, head of Agricultural Engineering Research at the Louisiana State Experiment Station has described some of the machinery demonstrated during the field trips for *The Sugar Bulletin.* "Several pieces of interesting equipment were in operation," Mr. Barr writes. "The first of these was a crawler type tractor of 40 h.p. on which a light weight drag line unit had been installed. A special feature of this unit allows the drag line bucket to be handled in the normal way, but in filling the bucket, it is pulled parallel with the bottom of the ditch. In this manner the side banks are not disturbed but the accumulation of silt in the bottom of the ditch is cleaned out. This unit can be equipped with a standard bucket for cleaning large ditches or with a special bucket shaped to fit the ditch. This unit is handled by one man, and as it is a relatively new unit, figures on the cost are not available at this time. Plantations having use for a crawler tractor of 35 to 40 h.p. for a part of the year, could well afford to investigate this unit, as it will both clean ditches and load cane when equipped with the drag line unit.

"A second piece of equipment was a large portable burner which can be used for eradicating weeds in drains which it is getting almost impossible to secure hand labor for cleaning. This machine will completely burn up the weeds at a speed of ¾ miles per hour, but it is recommended to use the machine at 1½ to 2 miles per hour, scorching and killing the larger weeds, or completely burning the small grass. This machine will consume 25 to 30 gallons of fuel oil per hour. The light weight furnace oil, Diesel oil, or kerosene can be burned equally well.

"A third machine which has been used quite ex-extensively in England and Australia, known as the Mole Drain, was in operation putting moles in a cut of sugarcane land. At the lower end of the cut three moles are started from the open drainage ditch at a depth of 36 inches and carried cross wise of the cut. Moles are installed at a depth of 30 inches lengthwise of the cut between each row. This leaves a 3½ inch open drain in the soil without the use of drainage tile. This type of drainage is well suited to the heavy soils and should remain serviceable for four to seven years. However, no data is available on their use in Louisiana but we are now in the process of installing five test plots in the cane territory to determine their useful life. This equipment requires a tractor of 50 to 60 h.p. on the draw bar when installing moles at a depth of 36 inches.

"A fourth machine consists of three units of revolving blades, somewhat similar to a cotton stalk cutter except being built much heavier. It is intended primarily as a tool for removing brush, briars, and Cherokee roses from pasture lands. This unit will cover from 35 to 40 acres per day in pasture land and could also be used on the sugarcane plantation for chopping down soybeans and stalks. A tractor of 20 to 30 h.p. on the draw bar is needed for this three unit machine."

Afternoon Session

In the afternoon the Louisiana Sugarcane Technologists Association held its Annual Meeting. The following papers were read:

(1) The Administration of a Sugar Plantation, by Stephen C. Munson.

(2) The Operation of a Canning Plant on a Sugar Plantation, by L. C. Bourgeois, Jr.

(3) Data on Early Developments and Growth of Flame Cultivation, by F. Evans Farwell.

At the end of a very interesting meeting the following officers were installed for the year 1945:

President: George Arceneaux, Houma, Louisiana

First Vice-President: E. C. Simon, Louisiana State University, Baton Rouge, Louisiana

Second Vice-President: A. J. Isacks, Houma, Louisiana

Secretary-Treasurer: F. A. Vought, Houma, Louisiana

Chairman of the Administration Section: W. E. McFarland, Reserve, Louisiana

Chairman of the Manufacturing Section: A. G. Keller, Franklin, Louisiana

Chairman of the Agricultural Section: R. T. Gibbens, Cinclare, Louisiana

Following the adjournment of the Annual Meeting of the Louisiana Sugar Cane Technologists Asso-

ciation, a brief meeting of the Contact Committee of the American Sugar Cane League was held. The distribution of unreleased sugar cane varieties to the primary and secondary increase stations was discussed and a special committee was appointed to consider applications for the establishment of additional secondary increase stations. This committee is composed of Mr. Stephen C. Munson, of Jeanerette; Dr. George Arceneaux, Houma Experiment Station, Houma; and W. G. Taggart, Director of Agricultural Experiment Stations, Baton Rouge.

The Operation of a Canning Plant on A Sugar Plantation*

By L. C. Bourgeois, Jr.

In the early part of 1941 Mr. F. Evans Farwell, vice-president of Milliken & Farwell, Inc., broached the subject of trying out a small canning plant on Smithfield Plantation. Mr. Farwell's idea was to erect an inexpensive plant, utilizing material from the factory "junk pile" so far as possible. His idea was to grow and process vegetables for use in our factory boarding houses during the grinding season, and to make the canning facilities available to our employees at cost. Needless to say there was quite a bit of skepticism, and the project had to undergo the usual amount of joshing and kidding that many a new idea must suffer on our plantations here in Louisiana. However, we went into the venture and carried it through to the best of our ability.

We erected a small steel frame building from discarded boiler tubes. This building was then covered, roof and sides, with corrugated iron sheets. We poured a concrete floor, screened the windows, and also screened a porch 10 feet wide and running across the width of the building, to serve as a receiving station, and as additional working space in warm weather. We made our pressure cooker and our exhauster from the shell of an old juice heater. Old hot room cars were installed to serve as washing, blanching and scalding tanks. We reconditioned a small boiler which had been out of use for several years and installed it adjacent to the canning plant. We rented an automatic sealing machine from the American Can Co., purchased the necessary small tools, and we were ready for business.

One angle of the canning project that interested Mr. Farwell very much was the opportunity that it would present of encouraging our employees to grow more vegetables for their own use, to preserve their surplus by canning, and to improve their diet through having wholesome, home grown vegetables canned and stored on their pantry shelves. To encourage the growing of more home gardens among our employees we inaugurated a series of garden contests in 1942. All employees were urged to plant a home garden, and cash prizes were offered for the best gardens. We offered three cash prizes for the white employees, and three for the colored employees, on each plantation. The Parish Home Demonstration Agent and County Agent cooperated with us in encouraging the gardens, in helping with advice when needed, and judged the gardens, naming the winners. Over 200 gardens were judged in 1942 on Smithfield alone, and some of our colored employees had as many as 30 different vegetables growing in their gardens. However, as people realized that food rationing was not quite the terrible bugaboo that they had feared it would be, and as the wages of our laborers increased, a decided drop in home gardening was noticed this year. One cause of this is undoubtedly the fact that so many people actually over-canned in 1943. I know this to be true, not only on our plantations, but throughout our Parish, and I believe, throughout the Nation.

I will not burden you with a detailed report of our operations year by year, but I do want to give you a general summary of our operations so that you may judge what progress we have made. The first year of our operations, 1941, we processed 1944 No. 10 cans, 2955 No. 3 cans, and 22 No. 5 cans, a total of 4,921 cans, of this total 150 No. 3 cans were processed for 6 individual employees. These 4,921 cans consisted of 10 different products, namely; string beans, beets, okra, tomatoes, tomatoes and okra, tomatoes and corn, crowder peas, corn, peaches and pears.

In 1942 we processed 1,647 No. 10 cans, 10,547 No. 2 cans, and 236 No. 5 cans, a total of 12,430 cans, more than double our 1941 pack. Of this total of 12,430 cans 2,840 were processed for 41 individual employees. This marked a decided increase in employee interest and was very encouraging. This 1942 pack consisted of different products; spinach, English peas, string beans, beets, corn, tomatoes, lima beans, okra, crowder peas, squash, eggplant and pears.

In 1943 we processed 1,606 No. 10 cans, 15,538 No. 2 cans, and 673 No. 5 cans, a total of 17,817 cans. This amounted to an increase of 43 per cent over 1942. Of this total 11,325 cans were processed for 127 individual employees. This marked a 298 per cent increase in number of cans processed for employees, and a 209 per cent increase in number of employees utilizing the canning facilities, over 1942. These results were very gratifying to us and we felt that we were rendering a real service to our employees and indirectly to the war effort, as every can of home canned vegetables meant one less can that would be consumed by civilians from the regular commercial pack. The products processed by us in 1943 were as follows: spinach, kale, string beans, beets, carrots, corn, okra, okra and tomatoes, lima beans, English peas, tomatoes, eggplant, cashaw, shelled beans, corn and tomatoes, squash, tomato juice, and peaches, a total of 18 different products.

In this present season, 1944, we have processed 1,281 No. 10 cans, 6,243 No. 2 cans, a total of 7,524 cans. Of this total 2,747 cans were processed for 45 individual employees. Our 1944 pack consisted of 16 different products, namely; string beans, beets, carrots, corn, okra and tomatoes, peaches, shelled beans, crowder peas, squash, tomatoes, lima beans, okra, figs, pears, cashaw and eggplant. As you see this year we experienced a sharp decrease from last year's figures. This is due to several factors. The majority of our employees really over-canned in 1943 and had a surplus of canned goods left on their pantry shelves for this year. The increase in wages and the loosening up of rationing on many food products caused the average worker to be less concerned over the problem of furnishing his table in 1944 than he was in 1943. Finally the weather in our section was very unfavorable this year for early spring gardens. Due to the shortage of labor, and to the unfavorable weather, our own gardens did not produce anything like a normal crop of vegetables. The year 1944,

"SURE I'M TAKING BETTER CARE OF MY MACHINERY"

"It's got to last me, and I can't farm without it.

"No machinery will last long without the care that keeps it in shape.

"Regular lubrication comes first . . . and a fellow just naturally invites trouble when he puts it off.

"I know that the *right* fuels and the *right* oils and greases make a big difference in the way my machinery runs and wears.

"I don't take any chances.

"I ask the Magnolia man for his advice. I know I can depend on what he tells me . . . and on what he sells me.

"Yes, sir, the Magnolia man is really the farmer's friend. It will pay you to talk to him soon."

Gasoline Powers the Attack . . . Don't Waste a Drop

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however, has not been, and gives no promise of being, a normal year in any respect. It has been a year of tremendous international developments, a year of unusual weather, and a year of extremely difficult working conditions due to the very serious shortage of labor for the farms.

In conclusion I want to summarize our results to date, and our prospects for the future as I see them. We did not go in to this canning project with the idea of making a profitable financial venture of it directly. We hoped rather to derive our profits indirectly through having a more contented group of employees on our plantation, through having employees whose families were healthier and better fed through having the necessary wholesome home grown vegetables canned on their pantry shelves. We meant this project to provide more normal year round employment for a certain number of our employees. Of course we have had no opportunity to see just how that angle of it would work out in the past few years. We have had no question of supplying work for our employees during slack season, but rather we have had the problem of trying to do the so many necessary things with the so few workers that we had available. However, you all know that in normal times if a plantation has its usual complement of employees there are certain seasons of the year when there is not work available for all of the workers. Just at present cash is plentiful among all types of workers. I believe that in normal times many workers will prefer to put out a few extra hours of work in order to have their own home canned food on their pantry shelves, rather than put out cash to buy it from the grocery. Aside from the employee angle of it, we are producing and canning all the vegetables that we need for our factory boarding houses. We can serve a mighty good meal with nothing other than bread, rice, and the necessary condiments purchased from commercial sources.

There is no doubt but what our canning plant has filled a definite need through these war years of food shortages. As you know, a large part of the commercial canner's pack is ear-marked for the armed forces of the nation. Every can that we have been able to process on the plantation has been one less can needed for civilian consumption from the commercial pack. We have furnished cans and canning facilities to our employees at cost so that they might preserve their surplus vegetables at a time when most canned goods were strictly rationed. Just how a plantation canning plant will fit in to the schemes of things when we return to normalcy can not be judged now. None of us can foresee just what conditions on our plantations will be after the war. The fact, remains, however, that the plantation canning plant has been a definite success so far. I believe that such a plant will find its place on our plantation after the war, also, and will have its share in keeping a higher class and more contented group of employees on our farms.

* Paper presented to the Annual Meeting of the Louisiana Sugarcane Technologists Association, held in Baton Rouge, La., September 19, 1944.

Dr. H. S. Paine

Dr. H. S. Paine, well known to most sugar men through his work for the past 25 years as Chief of the Carbohydrate Division of the United States Department of Agriculture, joined the technical staff of Refined Syrups and Sugars, Inc., Yonkers, New York on September first as a Research Consultant.

Distribution of Sugar

The War Food Administration issued, on August 15th, 1944, the following preliminary Sugar Statistics for the First Seven months of 1944.

Distribution of sugar by the primary distributors in the United States in July and during January-July, 1944, compiled from weekly data submitted by distributors, as compared with final figures for the corresponding period of 1943, was as follows:

Deliveries of Direct-Consumption Sugar

(short tons, raw value)

	1944[1]		1943	
	July	Jan-July	July	Jan-July
Refiners	535,578	3,163,086	447,224	2,503,672
Beet Processors	119,091	627,618	186,922	954,657
Importers	71,388	291,358	42,767	249,089
Mainland Cane Mills	2,942	79,119	8,870	77,756
Total	728,999	4,161,181	685,783	3,785,174
Deliveries for Export	16,655	246,575	23,666	279,394
For Consumption in continentinal U. S.	712,344	3,914,606	662,117	3,505,780

Stocks reported by the distributors as of July 29, 1944 as compared with final July 31, 1943, stocks were as follows:

Month-end Stocks

(short tons, raw value)

	1944[1]	1943
Refiners raws[2]	506,031	538,209
Refiners refined	174,242	217,856
Beet Processors	262,309	456,513
Importers	49,758	152,624
Mainland Cane Mills	7,492[3]	13,603
Total	999,832	1,378,805

[1] Preliminary.

[2] Includes 106,402 tons of raw sugar in Continental U. S. but not reported by refiners as on stock on July 31, 1943, and a comparable item for 1944.

[3] Direct-consumption sugar only.

The War Food Administration has also issued the following figures on entries of sugar from offshores areas through July 31, 1944:

The quantity of sugar entered for consumption from all offshore areas during January-July amounted to 3,329,391 short tons, raw value. For the corresponding period last year the quantity entered totaled 2,819,852 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 208,338 short tons of sugar, raw value, was marketed by the mainland cane area and 508,527 tons by the continental beet area during January-June, 1944, as compared with 167,762 tons and 767,735 tons, respectively, during the same period of 1943.

Area	Quantity entered through July 31
	(short tons 96° equivalent)
Cuba	2,237,320
Hawaii	454,903
Puerto Rico	576,034
Foreign Countries other than Cuba	58,364
Virgin Islands	2,770
Total	3,329,391

DIRECT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through July 31.

Area	Quantity entered through July 31		
	Sugar Polarizing 99.8° and above	Sugar Polarizing less than 99.8°	Total
	(short tons, 96° equivalent)		
Cuba	202,988	8,844	211,832
Puerto Rico	50,786	6,859	57,645
Hawaii	0	207	207
Total	253,774	15,910	269,684

ENTRIES FROM FULL-DUTY COUNTRIES

Area	Quantity entered through July 31[1]
	(pounds)
Dominican Republic	68,770,547
Dutch East Indies	1,310,451
Haiti	32,014,303
Martinique	14,633,092
Total	116,728,393
Tons	58,364

[1] Excluding the first 20,000 pounds entered from each area. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

L. S. U. Sugar Factory Superintendent Appointed

Dr. L. J. Lasalle, dean of the College of Engineering and Director of the Engineering Experiment Station, Louisiana State University, has announced the appointment of Mr. Carl W. Stewart as superintendent of the Audubon Sugar Factory, Louisiana State University's experimental plant. For the first time, at least since the Factory was placed under the supervision of the College of Engineering, the Factory will have a full-time research supervisor. Mr. Stewart has had a wide and varied experience of some twenty-five years in sugar manufacture. Beside conducting an experimental program during the regular grinding season, Mr. Stewart will carry on research in sugar for the remainder of the year. The cooperation of the Louisiana Sugar Industry is requested by Dr. Lassalle to secure the maximum benefits from this new program of sugar research.

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THE SUGAR BULLETIN

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1944 Fair Price Determination

TITLE 7—AGRICULTURE

CHAPTER VIII

WAR FOOD ADMINISTRATION

Part 802—Sugar Determinations

Determination of Fair and Reasonable Prices for the 1944 Crops of Florida and Louisiana Sugarcane for Sugar, Pursuant to the Sugar Act of 1937, as Amended.

Pursuant to Section 301(d) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Section 802.22 M. *Fair and Reasonable Prices for the 1944 Crop of Florida Sugarcane for Sugar.* Fair and reasonable prices for the 1944 crop of Florida sugarcane for sugar shall not be less than those provided for in the determination of fair and reasonable prices for the 1943 crop of Florida sugarcane for sugar, issued November 13, 1943, and published in the Federal Register on November 16, 1943 (8. F. R. 15549) (Sec. 301, 50 Stat. 909; 7 U. S. C. 1131; E. O. 9322, as amended by E. O. 9334).

Section 802.22 N. *Fair and Reasonable Prices for the 1944 Crop of Louisiana Sugarcane for Sugar.* Fair and reasonable prices for the 1944 crop of Louisiana sugarcane for sugar shall not be less than those provided for in the determination of fair and reasonable prices for the 1942 crop of Louisiana sugarcane for sugar, issued October 8, 1942, and published in the Federal Register on October 10, 1942 (7 F. R. 8013), except that for the purpose of determining season average prices for 96° raw sugar, duty paid basis at New Orleans, Louisiana, the period beginning with October 13, 1944 (or the Friday within the first marketing week of actual trading) and ending on March 30, 1945, shall be governing. (Sec. 301, 50 Stat. 909; 7 C. C. C. 1131; E. O. 9322, as amended by E. O. 9334).

Issued this 11th day of October, 1944.

"Ashley Sellers"

Assistant War Food Administrator.

(*Below follows the* 1942 *Fair Price Determination referred to by the* 1944 *Fair Price Determination.*)

Louisiana Sugarcane Prices for 1942 Crop

Determination of fair and reasonable prices for the 1942 crop of Louisiana sugarcane for sugar, pursuant to the Sugar Act of 1937, as amended.

Whereas, section 301(d) of the Sugar Act of 1937, as amended, provides, as one of the conditions for payment to producers of sugar beets and sugarcane, as follows:

> That the producer on the farm who is also, directly or indirectly, a processor of sugar beets or sugarcane, as may be determined by the Secretary, shall have paid, or contracted to pay under either purchase or toll agreements, for any sugar beets or sugarcane grown by other producers and processed by him at rates not less than those that may be determined by the Secretary to be fair and reasonable after investigation and due notice and opportunity for public hearing.

Whereas, the Secretary of Agriculture held public hearings for the purpose of receiving evidence likely to be of assistance to him in determining fair and reasonable prices for the 1942 crop of Louisiana sugarcane for sugar:

NOW, THEREFORE, I, GROVER B. HILL, Assistant Secretary of Agriculture, after investigation

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in which are consolidated

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The American Cane Growers' Assn.
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and consideration of the evidence obtained at the aforesaid hearings and all other information before me, do hereby make the following determination:

LOUISIANA SUGARCANE FOR SUGAR—(a) *Fair and Reasonable Prices for the* 1942 *Crop.* Fair and reasonable prices for the 1942 crop of Louisiana sugarcane shall be (when the price of 96° raw sugar, duty-paid basis, is 3.50 cents per pound) not less than $1.00 per ton of standard sugarcane for each 1 cent of the average price per pound of raw sugar determined in accordance with whichever of the following options is agreed upon: (1) the average of the weekly quota of 96° raw sugar, duty-paid basis, on the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association Exchange for the week in which such sugarcane is delivered; or (2) the simple average of the weekly quotations of 96° raw sugar, duty-paid basis on the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association Exchange for the weeks from Friday, October 9, 1942 (or the Friday within the first marketing week of actual trading to April 1, 1943, except that, if such quotations do not give full effect to orders or regulations of the Federal Government pertaining to the establishment of a price for 96° raw sugar, duty-paid basis, at New Orleans, Louisiana, the Chief of the Sugar Agency may substitute such prices as will give effect to any such Federal orders or regulations: *Provided, however,*

(i) That for each decline of ¼ cent in the price of 1 pound of 96° raw sugar, duty-paid basis, below 3.50 cents per pound, the price of standard sugarcane shall be reduced by not more than 3 per centum, with intervening prices in proportion, unless the price of sugar falls below 2.75 cents per pound, in which case no further reduction shall be made;

(ii) That for an advance of ¼ cent in the price of 1 pound of 96° raw sugar, duty-paid basis, above 3.50 cents per pound, the price of standard sugarcane shall be increased by not less than 3 per centum, with intervening prices in proportion, unless the price of raw sugar exceeds 3.75 cents per pound, in which case settlement shall be made on the basis of $1.03 for each 1 cent of the price;

(iii) That the premiums paid for sugarcane of the 1942 crop containing more sucrose in the normal juice than that defined as standard sugarcane shall be not less than those paid during the 1941 crop year;

(iv) That the discount applicable to sugarcane of the 1942 crop containing less sucrose in the normal juice than that defined as standard sugarcane shall be not greater than those applied in connection with the 1941 crop; and

(v) That, in the event any agency of the Federal Government shall, through any orders or regulations require modification of the normal marketing practices, then the price basis for settlement shall be determined by reference to the results of such orders or regulations and upon approval by the Chief of the Sugar Agency.

(b) DEFINITIONS AND GENERAL PROVISIONS. (1) On each ton of Louisiana sugarcane there shall be paid a molasses bonus, such bonus to be computed by taking ½ of the excess, if any, of the average price per gallon of blackstrap molasses, as quoted by the agencies set out above for the period there specified, over 8 cents, and multiplying the product by 6½ (a figure representing the state average recoveries of blackstrap molasses for the three-year period, 1938-1940).

(2) Deductions based upon deceased boiling house efficiency may be made for frozen sugarcane accepted by the processor (it being understood that cane shall not be considered as frozen even after being subjected to freezing temperature unless and until there is evidence of damage having taken place because of the freeze) at a rate not in excess of 3.775 per centum of the payment, computed without regard to the molasses bonus, for each 0.25 cc. of acidity above 2.25 cc. but not in excess of 4.50 cc. (analyzed in accordance with the established methods of the area, with intervening fractions computed to the nearest multiple of 0.05cc).

(3) Standard sugarcane shall be sugarcane containing no more sucrose in the normal juice than was defined as standard sugarcane by the processor in his sugarcane purchase contract, or contracts, verbal or written, used in the year 1941.

(4) Costs, such as hoisting and weighing of sugarcane, shall be absorbed by the processor, except in those instances in which the processor did not bear such costs in 1941; but nothing in this subparagraph shall be construed as prohibiting negotiations with respect to the level of such costs, subject, upon appeal, to review by the Secretary of Agriculture or his authorized agent, in the event of changes alleged to be unfair to either the producer or processor.

(5) Where the only available practicable means of transportation are rail facilities and the distance to the nearest factory is in excess of 50 miles, the cost of transportation may, by mutual consent of the interested parties, and subject, upon appeal, to review by the Secretary of Agriculture or his authorized agent, be shared by the processor and the producer.

(6) The processor shall not, through any subterfuge or device whatsoever, reduce the returns from the 1942 crop of Louisiana sugarcane to the producer below those determined above.

Done at Washington, D. C., this 8th day of October, 1942. Witness my hand and seal of the Department of Agriculture.

(Seal) GROVER B. HILL,
Assistant Secretary of Agriculture.

ATTENTION: FARMERS

Proposed Amendment No. 9 to the Constitution of the State of Louisiana (Act 313 of 1944) which will be submitted to the voters of this state at the general election to be held on November 7th, proposes an amendment to Article 6 A of the Constitution, by amending Section 1 thereof, so as to provide that farm tractor fuel, as defined in the proposed amendment, used exclusively for farm purposes shall be exempted from the provisions of this article, which levies a one-cent-per-gallon tax on all gasoline, benzine, naphtha or other motor fuel sold, used or consumed in the State of Louisiana.

Although it is our understanding that tractor fuel of the specifications contained in this amendment is not now available, if the amendment is adopted the farmers will not be required to pay this one-cent-per-gallon tax on such tractor fuel, when available. If the amendment is defeated the farmers will have to pay this one-cent-per-gallon tax.

Therefore the adoption of this amendment will mean a saving of one cent per gallon on such tractor fuel used for farm purposes.

Applicability of Federal Transportation Tax to Transportation of Sugarcane

The American Sugar Cane League takes this opportunity to remind all growers and processors, who employ others to haul sugarcane from field to factory, of the 3% Federal Tax on transportation of property, which became effective on December 1, 1942.

Section 3475 of the U. S. Internal Revenue Code imposes a tax on the transportation of property by rail, motor vehicle, water or air from one point in the United States to another, equal to 3% of the transportation charge. This tax is applicable only to amounts paid to a person engaged in the business of transporting property for hire. The tax is imposed on the person making the payment subject to the tax, and is payable by him to the person who transports the property. The person who transports the property is required to collect the tax and, on or before the last day of each month, make a return under oath for the preceding month, and pay the taxes collected by him to the Collector of Internal Revenue for the district in which his principal place of business is located.

The question of whether the tax is due on the amount paid for the transportation of sugarcane is dependent on the status of the person hauling the cane. If such person is engaged in the business of transporting property for hire, the tax is due. The Bureau of Internal Revenue has issued certain rulings in connection with the transportation and delivery of sugar beets, which rulings were issued in reply to questions based on contracts between processors and growers calling for delivery f. o. b. factory. These rulings are applicable to the transportation of sugarcane. The questions and rulings are quoted herewith, with the word "cane" placed in parenthesis after the word "beets":

"1. The farmer hauls the beets (cane) in his own truck or wagon to a near-by railroad point and ships them by rail to the factory."

"The hauling of beets (cane) by a farmer in his own truck from the farm to the railroad point is not taxable. However, the amount paid for the transportation by rail to the factory is subject to the tax."

"2. The farmer hauls them direct to the factory in his own truck or wagon."

"If the beets (cane) are sold at a delivered price and no amount is paid for transporta- the tax does not apply."

"3. The farmer hires a contract trucker to haul the beets (cane) from his farm to the factory paying an agreed amount per ton. These contract haulers are normally persons (Example, a road contractor) who have a truck or trucks which they use in their own work but are free to haul beets (cane) in the fall. The price paid by the farmer for hauling the beets (cane) from the farm to factory includes the loading of the beets (cane) into the truck at the farm."

"The amount paid for the transportation of the beets (cane), including any amount charged for the loading in connection with such transportation service, is subject to the tax."

"4. A neighboring farmer who has a truck helps out another farmer who does not own a truck and hauls his beets (cane) to the factory for him at a fixed price per ton, which price may or may not include the loading, depending on the arrangements made between the two farmers."

"The tax on the transportation of property applies only to amounts paid to a 'person engaged in the business of transporting property for hire.' Where a farmer transports property at regular or frequent intervals for hire, he is considered to be engaged in the business of transporting property for hire within the meaning of the statute, and the amount paid to him for such transportation is subject to the tax. However, if the transportation of property by such farmer is only occasional, he is not regarded as a person engaged in the business of transporting property for hire, and the tax would not apply."

Flame Cultivation and Flame Eradication

Presented by F. Evans Farwell before the Annual Meeting of the Louisiana Sugar Cane Technologists' Association, September 1, 1944.

For data on early developments and growth of flame cultivation, see *Flame Cultivation of Sugarcane* by Harold T. Barr in the July 15, 1944 edition of the *Sugar Bulletin.*

The use of flame cultivation appears to be quite successful in controlling sheepfoot, wild parsley, indigo, crab grass, tie vines, and nut grass. Studies so far show good success in the control of alligator weed (alternathera philoxeroides). In the case of Johnson grass (sorghum halepense) some tests appear very successful, whereas others are doubtful. It is believed that more experiments and changes in technique will result in better control of this grass.

In spite of the rapid development of this form of cultivation, some may not be familiar with the practices and mechanics involved. The basis of flame cultivation in sugarcane might be called differential burning, that is, unwanted weeds and grasses are killed back, whereas the sugarcane's growth is only slightly retarted and the cane is basically unharmed. If at a given rate of speed we pass a flame of say 1000° F. over a glass tube filled with water, the sides of which tubes are 100th. of an inch thick and the diameter of the tube is 1/16 of an inch, the water will boil. If at the same rate of speed we pass the same 1000° F. flame over another glass tube filled with water, the sides of which are 100th. of an inch thick and whose diameter is 1 inch, we would only get hot water—no boiling—no destruction. So, in the case of thin fragile grass, the cells would rupture, killing back the grass; whereas, in the case of the heavier, greater diameter and more bulky sugarcane, only the leafy edges would be scorched. The terminal bud of the cane is so well protected by the leafy sheath that no damage occurs to it.

There are many advantages to flame cultivation or flame hoeing as against hand work.

With a properly trained crew, it can be used effectively at night.

It can be used while the ground is still too wet for hand hoeing. In fact, it can be used at any time when the tractor pulling or operating the flame cultivator can get through the mud.

It does not destroy or damage the root system. Where cane has been flamed there is a greater yield than an equivalent non-flamed cane. This is no doubt due to the fact that no cane is really destroyed as in the case with hand hoeing and that with flamed cane it is not necessary to throw dirt over the grasses with mechanical cultivators and thusly the drill may be kept open later, all of which results in greater suckering.

The cane suckers better and its root system is not disturbed by flame cultivation, and this, of course, permits growth of the cane and lessens soil erosion. It does kill many insects. Whether the overall results of this killing will be harmful or beneficial remains to be seen.

Repeated and proper flaming will destroy weeds and their seeds, so that cleaner lands will eventually result from such treatment. When used in conjunction with hand hoeing, it makes this latter operation much easier and more efficient. With alligator weed it has been found in many cases that hand hoeing followed immediately by heavy rain often resulted in the spreading and subsequent extended growth of alligator weed. Where this weed is flamed, that part above ground is killed and an immediate rain will not cause the growth joints to sprout.

It definitely saves labor, or to put it another way, it materially increases the efficiency of available labor.

With the improvements in burners and technique that are sure to result from the wide-spread use of flame cultivators, it is safe to say that they are not a "fly-by-night" gadget but represent improvements in the methods of cultivation that are here to stay. Even when hand hoeing labor becomes plentiful, the flame cultivators will remain on the job. Some people have found it advantageous to use flame cultivators during September in order to save a hand hoeing in August plant cane. This enables the cane to make a better stand and establish a more substantial root system. Flaming at this time of year is moreover helpful because such an operation does not badly drain the labor being used to plant cane. Weed seeds destroyed at this time will result in lessened weed competition in the spring and following years.

The acreage that can be handled by a flame cultivator, of course, depends on the kind, thickness and height of the grasses or weeds to be controlled. A two-row machine will handle from 75 to 225 acres of cane per season. Generally it seems that most operators try to use their flame cultivators weekly. Naturally, no hard and fixed rules can apply to such machines since weather conditions are never really stable. Not considering depreciation on the machines, the entire cost of flaming an acre normally varies from 60 to 80c, this including the cost of labor.

Flaming is most efficient when the weeds and grasses are small. Having this in mind, many operators are going to make extensive experiments next January and February by not shaving stubble, but flaming it instead. Naturally, this will be done mainly on rows that were cleanly cut by harvesting machines. It is possible that a very light burning (rapid movement of the machine down the row) will be sufficient at this time of year.

At the present time there are two main types of flame cultivators in use here in Louisiana.

One is the sulky which is simply a cart type of vehicle usually mounted on rubber tires on which is set up the engine with its air compressor, fuel tank and hoses to the burners. This unit is pulled by

mules or tractor.

The other type has the compressor, fuel tank, hoses, and burners mounted on the tractor. The power take-off furnishes energy to run the compressors.

Another type of flame cultivator is being tested. It is a self-propelled high clearance unit made in such a way that it can be used well after the normal lay-by period. With many of the older varieties of cane, such a unit would not be needed, as the shading of the cane would overcome weed growth. The new erect varieties that are now grown are, of course, well adapted to mechanical harvesting and it is probable that the use of such harvesting equipment will increase and the demand will be for more and more varieties that are erect, having buds at a uniform height, and otherwise adapted to mechanization. It does appear, however, that these varieties are so erect that sufficient shading is not provided to stop weed growth and seeding during the late summer. Certainly something, maybe mechanical cultivation, has caused the very rapid spreading of alligator weed in recent years. So, if the variety trend continues toward these erect canes, a decision will probably have to be made in the not too distant future. Either we must arrange for August and September cultivation of cane with some kind of high clearance flame cultivator, or else plant these varieties in 4½ to 5 ft. rows. It is hoped that a detailed study of this matter will be made in the not too distant future.

Eradication

Fairly extensive experiments are being carried out to eliminate the worst sources of infestation of alligator weed and Johnson grass that are along ditch banks by the use of what may be called flame eradicators, that is, machines that create such intensive and prolonged heat that all growth, including insects, weeds, seeds and grasses, is killed on the ground. Many find that ditch bank growth can be controlled by burning at less frequent intervals than in the case with fallow field control by flaming.

These machines are also used for fallow flaming which has been found very effective where it is carried out at weekly intervals, especially in the control of Johnson grass. Alligator weed presents a more difficult problem but it is believed that progress has been made in its control. A fallow flaming costs about $2.50 per acre and a flaming unit will average, depending on growth, etc., some 6 acres per day. Where alligator weed or Johnson grass have heavily infested 4 or 5 rows from the ditch bank on each side of a cut, it is felt that this land should be taken out of production and given a treatment of allow burning and/or fallow cultivation unless it is to be used for pasture. An attempt should be made to cap out this land in the fall and plant melilotus which can be left until it dies in the spring. This, of course, occurs at a time when cultivating tools can normally be spared for fallow cultivation. If the capping out cannot be done in the fall early enough for planting melilotus, capping out should be done anyway as soon as the weather permits. Land should then be plowed every 2 or 3 weeks until about May 15, at which time weekly plowing or burning should be started.

Quite a few ditch bank burners, really portable home furnace oil burners, mounted on a type of turn table are now in use throughout the State and more have been ordered. Most of these machines emit a flame that is 6 to 7 ft. wide. A hood that will retain and intensify heat is a needed improvement that will no doubt be developed in the near future.

A shield is also needed where a ditch with cane along its sides is being burned. One company has recently placed an order for a self-propelled burner that will straddle the usual plantation ditches so that the weeds along the ditches can be burned without injuring standing cane on either side. This particular machine when used on fallow fields will be capable of producing a flame 21 ft. wide.

Depending on the weather and other such conditions, it is found satisfactory to burn the ditch banks every 10 to 14 days. The average flamer will take care of about 1000 lineal acres of ditches. Many feel that annual weeds on ditch banks can be controlled with three burnings at 5-week intervals. In the case of Johnson grass and alligator weed, the intervals should not be greater than 8 to 10 days.

Most operators have only burned ditches in open or fallow land except, of course, road ditches. A problem presented itself where operators wanted to use present machines to burn ditch banks traversing land where corn and beans were growing. A tractor could not pull the flamer without destroying the corn. By not planting corn in the first two rows, the operator could cut and harvest his beans in July, following this with two or three fallow plowings to encourage the weeds to expand their energy. The flamer, of course, could then travel over these two rows at weekly intervals and burn the ditch banks throughout August and September.

New experiments are being carried out along two very interesting lines in the control of Johnson grass and alligator weed.

A sprayer is made up from a flamer cultivator and tactor oil is sprayed on the weeds along a ditch bank. A week or so later, depending, of course, upon the intervening weather, the flame eradicator or ditch burner burns this same ditch bank. The fire at this time seems to be very effective.

Where the alligator weed infestation is relatively small and still confined to a ditch and its banks, ammate (ammonium sulfamate) in solution is sprayed. Two weeks or so later the ditch and banks are burned. Other experiments use the ammate before one or more burning treatments.

Most of the ditch bank burning this year has been done in corn, beans, or fallow land. But, it seems just a queston of a few years before fire will completely eliminate an old plantation stand-by—the blade.

Labor Committee Meets

A meeting called by the Labor Committee of the American Sugar Cane League was held in the County Agricultural Building at Thibodaux at 2 P. M., Friday, September 22. This meeting was attended by the Labor Committee, representatives of the staff of the Agricultural Extension Division, Louisiana State University, Baton Rouge, the Army Colonels representing Camps Livingston and Polk, the Commanders of the sub camps in the sugar belt, the County Agents of the sugar producing parishes, and a large number of sugar cane producers representing all of the Louisiana sugar belt.

The use of war prisoners in the sugar industry was discussed from all angles and after having been advised that the supply of war prisoners will probably be as large as the industry can efficiently employ in

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view of the limited housing accommodations, the following resolution was unanimously adopted with respect to the method of payment for the work performed by the prisoners of war:

"Resolved—That we adopt Colonel Martin's plan of drawing up the contract—that is, that the prisoners of war be worked on an hourly basis at the schedule set out in the Sugar Act, except where the prevailing wage in a parish is a higher rate; and that the contractor be allowed to give a task equal to what free labor will do under the same conditions, and that the contractor will be required to pay for only the proportionate amount of the task accomplished. The task will be mutually agreed upon between the contractor and the camp commander."

Sugar Prices, now and apres la guerre

C. J. Bourg

Sugar publications and market letters have been directing their attention to the price of sugar. We note with considerable satisfaction that the producers of sugar in all areas finally seem to have found common cause. We would be less than truthful if we failed to record our encouragement that the written expressions coming out of New York and the Eastern Seaboard gradually recognize more and more the value of domestic production and the importance of maintaining sugar production on the Continent at a profitable level.

The war record has proven several facts concerning sugar, chief among them being that Government control has not been realistic. Again, we note with pleasure that the various elements of the sugar industry have become more realistic in their recognition of common needs and the rights of each area.

Mention has been made frequently that there prevails in Government, an exaggerated passion to maintain a price standard. This sacred purpose has caused reductions in the production of sugar during war time when the ordinary citizen would have expected increased production.

All of us recognize the value of the "hold-in-line" order. None of us want excessive inflation. Sugar was the first important daily food to have a price ceiling. This ceiling was established at 3.45c per pound of raw sugar which represented an increase from the price that had existed in 1938 and 1939. The college-professor types in charge of OPA refused to recognize that the price of sugar had been artificially depressed by Government in 1938 through the use of an intellectual falsehood which was unwittingly repeated by Cabinet members who relied upon information given them by subordinates to the effect that the Continental sugar producing industry cost the American consumers three hundred million dollars per annum. The basis for this misrepresentation was several assumptions which were not facts but impossible "possibilities". Just at this time, we find Peru selling raw sugar in the real world market at 4c as compared to the Cuban sugar price paid by the Government of $2.65. If we could permit ourselves to indulge in a similar intellectual falsehood, we should be able to suggest that the American consumer is today getting back many times the imaginary three hundred million dollars which it might have cost him if several "ifs" had been possible.

The important fact today is that announced prices

do not mean the same under war-time controls as they did in pre-war days because of absorptions, concessions and indirect subsidies. The importance of this fact has to do with statistics that are relied upon so religiously by the bureaucratic type of Government official who seeks any justification for carrying out his objective. Just as the original OPA officials failed or refused to recognize that the 1938-39 price was not a profitable or reasonable one but an artificially depressed price, we must anticipate that there may be those who, after the war, will seek to go back to that same 1938-39 period for a "normal" basis. The tendency will be for all prices to be reduced from the war price level. That yardstick may well be a proper one for 99% of the commodities, but any survey of sugar prices and food values must include the really normal years when supply and demand determined normal price levels for sugar.

A recent release from OPA showed that the price of all foods had risen 55% while the price of sugar had risen only 25% in the same period.

Louisiana sugar producers know that their operations depend for a profit on the returns from the sale of by-products, principally molasses. The raw sugar price alone would mean red ink for many factory operations except for the black ink provided by molasses sales. This unsteady and uncertain dependence is definitely not normal and cannot be the basis of a business man's planning for the future.

Thank You, Senators and Congressmen

C. J. Bourg

The elections having indicated the prospect that the Senators and Congressmen from Louisiana are being returned for another term, it is appropriate to recognize the fine productive services that have been rendered during the war years for the welfare of the Louisiana sugar industry.

Few sugarcane growers take time to comprehend the daily efforts which are necessary to maintain the rights and needs of the industry because of the varied and complicated regulations and controls exercised by the U. S. government.

Recently, our President, in his annual report, outlined the more important of functions performed by the League on behalf of its members in connection with labor and war prisoners, fertilizer, seed cane, priorities, raw sugar distribution and prices.

Your Washington representative is pleased to state that in carrying out this really ambitious and comprehensive program, our Senators and Congressmen have been uniformly helpful and co-operative. In many cases, their assistance and support provided the final influence which brought about success.

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Mrs. Grace Cameron,
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We stand for the encouragement of Home Industries as against Foreign Competition

Vol. 23 NEW ORLEANS, LA., NOVEMBER 1, 1944 No. 3

Incentive Payments on 1944 Louisiana Sugarcane Crop

(CCC Letter No. 6 to Processors of Louisiana Sugarcane)

Subject: *Offer to Processors of* 1944-*Crop Louisiana Sugarcane.*

For the purpose of effectuating the price assistance program heretofore announced by the War Food Administration for Louisiana sugarcane, which provides for payments at the rate of 85 cents per ton of standard and salvage sugarcane, Commodity Credit Corporation, a corporate agency of the United States (hereinafter called "Commodity"), offers to make payments to processors of 1944-crop Louisiana sugarcane upon the terms and conditions specified below.

1. For the purpose of this offer:

(a) "Standard sugarcane" shall be standard sugarcane as defined in the Processor's sugarcane purchase contract, or contracts, verbal or written, used in the year 1943.

(b) "Salvage sugarcane" shall be frozen sugarcane of the 1944 Louisiana crop accepted by the Processor for manufacture into sugar or molasses the normal juice sucrose content of which is less than 9.5% and the acidity of which tests 3.0 cc's or above: *Provided,* That if such frozen sugarcane be ground for the production of molasses only, and the acidity test 4.5 cc's or above, such sugarcane shall be classed as salvage sugarcane regardless of sucrose content: *And provided further,* That sugarcane shall not be considered as frozen even though subjected to freezing temperature unless and until there is evidence of damage to the sugarcane because of the freeze.

(c) "Season average price" means the simple average of the weekly quotations of 96° raw sugar, duty-paid basis, of the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association for the weeks from Friday, October 13, 1944 (or the Friday within the first marketing week of actual trading), to March 30, 1945: *Provided,* That if such quotations do not give full effect to orders or regulations of the Federal Government pertaining to the establishment of a price for 96° raw sugar, duty-paid basis, at New Orleans, Louisiana, the Office of Distribution, War Food Administration, may substitute such prices as will give effect to any such Federal orders or regulations.

2. On or after November 15, 1944, Commodity shall, on application of the Processor approved by Commodity, pay to the Processor, except as provided in section 6(a), 65 cents per ton of the total estimated quantity of standard sugarcane to be delivered to the Processor by all producers and produced by the Processor for the extraction of sugar during the Processor's 1944 grinding season. Such estimated quantity shall not exceed 90 percent of the quantity of standard and salvage sugarcane of the 1943 Louisiana crop processed by the Processor, and shall be based on a survey of the standing cane from which deliveries to the Processor will be made and which is

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MARCEL J. VOORHIES, Editor

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in which are consolidated

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The American Cane Growers' Assn.
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produced by the Processor for the extraction of sugar during the Processor's 1944 grinding season.

3. (a) The Processor shall be obligated to pay to the Producer, in addition to the price otherwise payable by the Processor, 85 cents with respect to each ton of standard sugarcane delivered to the Processor by the Producer in the event the season average price does not exceed 3.73 cents per pound.

(b) The amount which the Processor is obligated to pay to the Producer under subsection (a) of this section shall be paid as follows: 65 cents of such amount per ton of standard sugarcane, except as provided in section 6(a), shall be paid by the Processor to the Producer promptly after the receipt from Commodity of the payment provided for in section 2 hereof with respect to all sugarcane theretofore delivered by the Producer to the Processor and promptly after the delivery by the Producer of sugarcane which is delivered to the Processor after the receipt of such payment from Commodity. The remainder of such amount shall be paid by the Processor to such Producer as soon as practicable after March 30, 1945.

4. The Processor shall be obligated to pay to the Producer, in addition to the price otherwise payable by the Processor, 85 cents with respect to each ton of salvage sugarcane delivered to the Processor by the Producer. Such payment shall be made to the Producer as soon as practicable after March 30, 1945.

5. (a) As soon as practicable after January 31, 1945, the Processor shall submit to Commodity a statement, in such form as Commodity may prescribe, showing the total quantity of standard sugarcane purchased or produced by or delivered to the Processor for the extraction of sugar and salvage sugarcane purchased or produced by or delivered to the Processor for the extraction of sugar or molasses during its 1944 grinding season, the total amount paid hereunder to the Producer by the Processor with respect to such sugarcane, and the total amount owing to the Producer by the Processor with respect to such sugarcane. In the event there has been no market change between January 31, 1945, and March 30, 1945, the Processor's statement shall be deemed to be the application mentioned in section 5(b) below.

(b) As soon as practicable after March 30, 1945, Commodity shall, on application of the Processor approved by Commodity, pay to the Processor, except as provided in section 6(b), any amount by which (i) the product of the number of tons of 1944-crop Louisiana standard sugarcane (for the extraction of sugar) and salvage sugarcane (for the extraction of sugar or molasses) delivered to the Processor by all producers and harvested from its own production by the Processor during the Processor's grinding season multiplied by 85 cents per ton of such sugarcane exceeds (ii) the amount theretofore paid under section 2 hereof.

(c) As soon as practicable after March 30, 1945, the Processor shall pay to Commodity, except as provided in section 6(b), any amount by which (i) the amount theretofore paid under section 2 hereof exceeds (ii) the product of the number of tons of 1944-crop Louisiana standard sugarcane (for the extraction of sugar) and salvage sugarcane (for the extraction of sugar or molasses) delivered to the Pro-

cessor by all producers and harvested from its own production by the Processor during the Processor's grinding season multiplied by 85 cents per ton of such sugarcane.

6. (a) In the event the quotation of 96° raw sugar, duty-paid basis, of the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association exceeds 3.73 cents per pound on November 15, 1944, the initial advance to be made by Commodity pursuant to section 2 hereof and the initial advance to be made by the Processor pursuant to section 3(b) hereof shall be reduced at the rate of $1.03 per ton of standard sugarcane for each one cent by which such quotation exceeds 3.73 cents per pound, fractional parts to be in proportion. In the event of an increase in the quotation of 96° raw sugar, duty-paid basis, of the said exchange and the said Association after November 15, 1944, the initial advance to be made by the Processor pursuant to section 3(b) hereof with respect to all sugarcane delivered after such increase in quotation shall be reduced at the rate of $1.03 per ton of standard sugarcane for each one cent by which such quotation exceeds 3.73 cents per pound, fractional parts to be in proportion.

(b) In the event the season average price exceeds 3.73 cents per pound, Commodity's obligation to the Processor under section 5(b) and the Processor's obligation to the Producer under section 3(a) shall be reduced and the Processor's obligation under section 5(c) shall be increased at the rate of $1.03 per ton of standard sugarcane for each one cent by which the season average price exceeds 3.73 cents per pound, fractional parts to be in proportion: *Provided,* That the obligation of the Processor to Commodity under section 5(c) hereof shall be limited to the amount the Processor has received from Commodity with respect to standard sugarcane.

7. Applications made by the Processor for payment hereunder shall be in such form, supported by such documents, and accompanied by such certifications and proofs as Commodity may prescribe, subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

8. The Processor shall keep complete and accurate books, records, and accounts with respect to all sugarcane purchased or produced by or delivered to it and with respect to all payments made to Producers by it. The Processor shall furnish to Commodity whatever information and reports relating to these transactions Commodity may from time to time request, subject to the approval of the Bureau of the Budget pursuant to the Federal Reports Act of 1942. Commodity shall have the right to audit the books, records, and accounts of the processor at any time or as many times as it may deem appropriate.

9. In the event the Processor fails to pay to the Producers entitled thereto any amount required to be paid hereunder, Commodity shall have the right to recover an equal amount from the Processor, such right being in addition to all other rights of Commodity in the premises.

10. Any Processor who desires to accept this offer shall return a signed copy thereof to Commodity.

COMMODITY CREDIT CORPORATION
By J. B. Hutson
President.

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10-0-10	For sugar cane and cotton in river bottoms where available potassium is low.
9-6-9	For sugar cane and cotton in river bottoms where available phosphorus and potassium are low.
8-8-8	For cotton and for oats and corn at planting in Coastal Plain and Mississippi terrace areas.
6-9-6	For rice and cotton in rice area (Coastal Prairie) on very fine sandy looms and silt loams.
6-9-6 or 6-8-4	For cotton in Coastal Plains where soils have heavy subsoils.
5-10-10 or 4-8-8	For cotton in Coastal Plain, Coastal Prairies and Mississippi terrace areas where rust is prevalent. If less than 600 pounds per acre is applied at planting an additional side-dressing containing 20 pounds or more nitrogen should be used.
5-10-5	For cotton, rice, and truck.
4-12-8	For peanuts, other legumes, sweet potatoes and mixed pastures.
4-12-4	For truck.
3-12-12	For legumes and pastures where available potassium is low.
0-12-12	For legumes and pastures. Particularly for old pastures containing legumes.
0-14-7	For legumes and pastures.

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The Administration of a Sugar Plantation*

By Stephen C. Munson

The administration of a sugar plantation is one of the most difficult as well as one of the most interesting occupations. I remember my old friend Ed Dickenson, long passed on, who very few of you will remember, saying "a manager or administrator of a sugar plantation must be a little of a banker, an office man, a factory man, a field man, a salesman and maybe several other things." But I am afraid that some of us in the old days, thought we knew a little too much of a lot of things. Of course we must know a little of a lot of things now, but we know a lot about a few things too. If it would serve any useful purpose, I could go into great length and recommend that all of us in charge of sugar units get together and work out a uniform system of bookkeeping with uniform reports which would be open to all, and subject to criticism. I know by years of experience that this will not be done—that is, not in the near future, and I am not sure if it would be the right thing to do anyway. There are many individual circumstances in a plantation set-up which do not lend themselves to uniform analysis and cure. The one outstanding accomplishment in the use of a uniform system is the use by all factories of the uniform factory or chemical report and system of analysis which was recommended—and recommended is a mild word for it—to us by the Sugar Section, when our system of benefit payments was instituted some years ago. Many of us objected then, but found after a while that the system was not only as good as what we were then using, but it gave us a certain amount of satisfaction in knowing that we were using the same method as our neighbors. It would seem that this method of "recommendation" is the only way we will come to a universal method of doing anything.

There are, of course, a great many new duties in administration that the manager of 10 years ago knew nothing of. This benevolent government of ours sees fit to place a number of onerous duties along with its benevolence, and like it or not, we are compelled to carry out many of these dictates in order to receive the benefits we so sadly need in order to operate. And in a way, we are going to accept the socialistic benefits of the era, we should not complain too loudly of the way in which it is done. The only real issue is that we must accept these benefits, if not in order to live, at least in order to profit by all there is available.

That our sugar industry is going through a mighty evolution no one will deny. And further that we must prepare ourselves for a far worse day than we have had recently, no one will deny. This is no place to expatiate on the horrors and difficulties of war, for we at home have certainly had the easier way when we compare our lot with those who have left home and family to risk their lives that we might live in peace hereafter. Our industry is on the brink of several developments that will tax our ingenuity and skill. The administration of these new features will be the measure of their success.

* Paper presented to the Annual Meeting of the Louisiana Sugarcane Technologists Association, held in Baton Rouge, La., September 19, 1944.

Freight Rebate on Louisiana Raw Sugar

(CCC Letter No. 2 to Refiners of Louisiana Raw Cane Sugar)

Subject: *Offer to Reimburse Refiners for Certain Excess Transportation Cost.* As a war measure, Commodity Credit Corporation, a corporate agency of the United States (hereinafter called "Commodity"), hereby offers to reimburse United States refiners of 1944-crop Louisiana raw cane sugar for certain excess transportation cost incurred by them in the shipment of raw sugar from any Louisiana producing mill to a refinery other than the refinery nearest to the mill freightwise, subject to the following terms and conditions:

(1) Such shipments of Louisiana raw cane sugar to refineries must have been approved in writing by the War Food Administration pursuant to War Food Order No. 7.

(2) Reimbursement hereunder shall be based on the gross weight of the sugar, including the weight of the bags, on which transportation cost was actually incurred and paid by the refiners for shipment of raw sugar from the producing mill to the refinery.

(3) The refiner shall, if it desires to obtain reimbursement hereunder for excess transportation cost with respect to any shipment of raw sugar, execute and submit to Commodity Credit Corporation, 60 Beaver Street, New York (4) New York, Forms CCC Sug. LR-2 and CCC Sug. LR-2A accompanied by copies of freight bills, copies of invoices covering such sugar, copies of its purchase contract(s), and such other documents as may be requested by Commodity. Such application and accompanying documents must be submitted within the calendar month following the calendar month during which the raw sugar was received by the refiner, unless an extension of of time is granted by Commodity.

(4) Upon the submission to and approval by Commodity of Forms CCC Sug. LR-2 and CCC Sug. LR-2A and such supporting documents as may be requested by Commodity, Commodity shall reimburse the refiner, subject to the provisions of this letter, in an amount equal to one cent per 100 pounds plus one-half of the result of the following calculation:

Subtract the cost which would have been incurred had the sugar been shipped to the refinery nearest the producing mill from a transportation cost (rather than a distance) point of view from the smaller of,

(i) the actual transportation cost incurred with respect to each shipment of raw sugar, or

(ii) the cost of such transportation based on the lowest available rate.

Provided, That in no event shall the reimbursement to the refiner exceed an amount which, when subtracted from the total cost of the raw sugar to the refiner at its refinery, would result in a cost to the refiner, per 100 pounds, below the ceiling price applicable at its refinery to sales of off-shore raw sugar: *And provided further,* That the amount paid by the refiner to the seller shall not result in a price

for such sugar, f.o.b. seller's raw sugar mill in excess of the ceiling price applicable at such mill.

(5) The refiner shall maintain books, records and accounts which will accurately and completely show the quantity of Louisiana raw cane sugar shipped to its refinery and all its costs with respect to such sugar. The refiner shall maintain such other books, records and accounts and shall make such reports, and submit such information relating to Louisiana raw cane sugar shipped by the refinery as Commodity may from time to time direct. Commodity shall have the right, at any time during business hours, to examine any such books, records and accounts of the refiner.

(6) After acceptance of this offer, Commodity may terminate or amend the ensuing contract upon 24 hours' notice to the refiner: *Provided,* That such termination or amendment shall not affect the right of the refiner to obtain reimbursement hereunder with respect to Louisiana raw sugar received at or enroute to the refinery prior to such termination or amendment.

(7) Wherever any of the foregoing provisions refer to transportation cost, such cost shall be deemed to exclude the Federal transportation tax.

(8) Commodity shall have no obligations hereunder until or unless the refiner shall have signified its acceptance hereof by executing and returning a duplicate copy of this offer.

COMMODITY CREDIT CORPORATION
By J. B. Hutson
President

No Syrup Changes

By C. J. Bourg

OPA officials have notified us informally that there is presently no plan to make major changes in the regulations regarding syrup. A meeting of OPA representatives with the syrup industry and with the Syrup Industry Advisory Committee was held at Baton Rouge, in September. Because of the lateness of the season, and since no agreement was reached at these meetings, the OPA is not inclined to change definitions or classifications in the middle of the syrup-producing harvest.

There may be some very minor improvements made in definitions and regulations but they are not expected to be of any significance in the syrup market.

It is the judgment of your Washington representative that the developments in the syrup market over the winter and into the spring will be studied carefully by OPA with a view to a determination well in advance of the 1945 harvest in regard to changes of major importance. Obviously, syrup producers should likewise study and interpret marketing developments with a view to making practical recommendations next year.

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Our Duty Is: To Vote

By C. J. Bourg

In a very few days, each member of the American Sugar Cane League will have the opportunity to exercise a privilege that is being denied to a majority of farmers in most countries of the world. Some farmers have died seeking to obtain that privilege. Many of our Louisiana farmers, and the sons of farmers, are today fighting in all parts of the world to maintain that right and to preserve the opportunity. It becomes a sacred duty, therefore, for each citizen to cast his vote on November 7th, regardless of which individual or individuals for whom he may vote. Voting is the most desirable and effectual demonstration of democracy in action.

The dependence of the sugar industry upon Government policy has become absolute. Proudly we can point to Louisiana's production of sugar in the war year as material evidence of civilian performance in the war effort. It proves our reliability as a source of sugar supply for the consumers of the United States in any emergency.

The conscience of the Louisiana sugarcane and sugar producers having revealed itself in praiseworthy production figures, it shall certainly be given further public demonstration in their willingness to report for duty as citizens when they appear in large numbers at the election of the Executive and Legislative officials of our Nation.

Sugar Prospects for 1945

(From Food Trade Letter No. 59 of the W.F.A.)

Sugar Prospects for 1945 indicate that with careful use by consumers all essential requirements can be met both for the household and for industry. A limited amount can also be provided for relief needs as well as the requirements of our allies. It is anticipated that the Cuban 1945 production will be significantly below the 1944 level, and that prospects in Hawaii and Puerto Rico will improve. In late 1943 and early 1944 Puerto Rico suffered one of the most severe droughts in its history. Instead of a million tons, only 725,000 tons were produced. Price-support programs have been announced for the continental areas, which should have the effect of increasing the 1945 production.

Requirements of the liberated European areas which normally have been filled from Cuba and in part from Java will have to be met. Little is currently known of the 1944 harvest prospect for beet sugar in Europe. The extent of the European need for cane sugar grown in the tropics cannot be appraised until more information of production and conditions in Europe is received. Nor is it safe to assume that relief will come from the Philippines or Java during 1945. It is expected, however that there will be a sufficient supply of grain so that even though industrial alcohol made from invert molasses costs only about half as much as when made from grain, no sugar or only small quantities will have to be put to this use. This action will more than offset the estimated decline in Cuban production.

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Dr. Lewis A. Hurst

There can be no more congenial task to an editor than to pay tribute, in a few inadequate words, to one who has served his time in harness and always pulled his weight well and vigorously and for the benefit of his fellow men.

Today we offer such a tribute to Dr. Lewis A. Hurst, Biochemist of the Division of Sugar Plant Investigations, Bureau of Plant Industry, of the United States Department of Agriculture, who, on July 31st, 1944, finding himself 70 years young, retired to the rare happiness of living over again in lesiure the achievements of his active, helpful, busy and industrious career during which he has accomplished so much in behalf of the sugar industry, both beet and cane, of the United States.

Preliminary Sugar Statistics for First Nine Months of 1944

Distribution of sugar by the primary distributors in the United States in September and during January-September, 1944, compiled from weekly data submitted by distributors, as compared with final figures for the corresponding period of 1943, was as follows:

	1944[1]		1943	
	(short tons, raw value)			
	Sept.	Jan.-Sept.	Sept.	Jan.-Sept.
Refiners	515,912	4,257,770	478,231	3,449,401
Beet Processors	101,822	851,417	151,932	1,242,152
Importers	43,643	403,747	67,574	368,027
Mainland Cane Mills	2,722	91,660	1,851	86,635
Total	664,099	5,604,594	699,588	5,146,215
Deliveries for Export	8,011	264,764	33,965	360,515
For consumption in continental U. S.	656,088	5,339,830	665,623	4,785,700

Stocks reported by the distributors as of September 30, 1944, as compared with final September 30, 1943, stocks were as follows:

	1944[1]	1943
	(short tons, raw value)	
Refiners raws[2]	276,465	352,870
Refiners refined	85,440	157,525
Beet Processors	85,832	228,373
Importers	6,484	120,326
Mainland Cane Mills	432	1,850
Total	454,653	860,944

[1] Preliminary.
[2] Includes 42,911 tons of raw sugar in Continental U. S. but not reported by refiners as in stock on September 30, 1943, and a comparable item for 1944.
[3] Direct-consumption sugar only.

ATTENTION: FARMERS

Proposed Amendment No. 9 to the Constitution of the State of Louisiana (Act 313 of 1944) which will be submitted to the voters of this state at the general election to be held on November 7th, proposes an amendment to Article 6 A of the Constitution, by amending Section 1 thereof, so as to provide that farm tractor fuel, as defined in the proposed amendment, used exclusively for farm purposes shall be exempted from the provisions of this article, which levies a one-cent-per-gallon tax on all gasoline, benzine, naphtha or other motor fuel sold, used or consumed in the State of Louisiana.

Although it is our understanding that tractor fuel of the specifications contained in this amendment is not now available, if the amendment is adopted the farmers will not be required to pay this one-cent-per-gallon tax on such tractor fuel, when available. If the amendment is defeated the farmers will have to pay this one-cent-per-gallon tax.

Therefore the adoption of this amendment will mean a saving of one cent per gallon on such tractor fuel used for farm purposes.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of the Sugar Bulletin, published semi-monthly at New Orleans, La., for October 1, 1944, State of Louisiana, Parish of Orleans.

Before me, a Notary Public in and for the State and parish aforesaid, personally appeared Marcel J. Voorhies, who, having been duly sworn according to law, deposes and says that he is the Editor of the Sugar Bulletin and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit.

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The American Sugar Cane League of the U. S. A., Inc., New Orleans, La.; Editor, Marcel J. Voorhies, New Orleans, La.; Managing Editor, none; Business Managers, None.

2. That the owner is the American Sugar Cane League of the U. S. A., Inc., New Orleans, La.; J. J. Shaffer, Jr., Houma, Louisiana, President; George L. Billeaud, Broussard, Louisiana, Vice-President; R. H. Chadwick, Bayou Goula, Louisiana, Treasurer; Frank L. Barker, Lockport, Louisiana, Secretary.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are none.

MARCEL J. VOORHIES,
Editor.

Sworn to and subscribed before me this 28th day of September, 1944.

MALCOLM L. DE LA HOUSSAYE,
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(Seal)

(My commission expires at death.)

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against foreign Competition

Vol. 23 NEW ORLEANS, LA., NOVEMBER 15, 1944 No. 4

Outlook For Sugar Machinery

(Industry Advisory Committees are representative groups formed for the purpose of furnishing advice and information to the War Production Board on matters furthering the war effort. No actions are taken or decisions made in these meetings, as they are solely for advisory purposes.)

The following is a partial summary of a meeting of the Sugar Machinery Advisory Committee held September 19, 1944 in Washington, D. C., with Mr. W. R. Dove, General Industrial Equipment Division, WPB, presiding.

The committee met to consider (1) shipments and backlogs of sugar machinery, (2) production problems, (3) preparation for reconversion, (4) the need for new equipment, (5) suggested amendments to order L-292, and (6) other problems.

Shipment and Backlogs of Sugar Machinery

Total shipments of sugar machinery from October 1, 1943 through July 31, 1944 amounted to $437,000, Mr. Dove told committee members. Of this amount, $360,000 was reported as domestic and $76,000 as export. It would seem, however, that the amount exported is actually higher than reported. Shipments during the last 3 months have accounted for more than half of the total, amounting to $78,000 a month on the average.

Backlogs of orders were $1,480,000 on July 31, Mr. Dove said, which represents 19 months' production at industry's present production rate or 5 months' production at the normal peacetime production rate.

Production Problems

Fulfillment of war contracts and difficulty in obtaining manpower and components are all factors in delaying the production of sugar machinery, committee members stated. One of the members said that his company still has 70 percent of its facilities tied up in war work. Other members reported that war contracts now represent only 25 or 30 percent of their companies' business.

Manpower is the chief obstacle to production in tight labor areas, members said. Lack of components such as motors and anti-friction bearings is retarding production. Steel castings have also been difficult to obtain although one of the members said that his company recently has been able to get delivery in 3 weeks.

Preparation for Reconversion

The War Production Board has issued four orders in preparation for reconversion to normal production, Mr. Fred W. Smith of the General Industrial Equipment Division stated. On July 22 Priorities Regulation 23 was issued to permit the manufacture of experimental models. The order is particularly important to manufacturers of consumers' goods. Priorities Regulation 24, issued on July 29 and amended on September 13, permits industry to place unrated orders for machine tools needed for postwar production. First applications is made to the local field offices of WPB, where surplus inventories of machine tools in the area are checked before orders may be placed.

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12
MARCEL J. VOORHIES, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

in which are consolidated
The Louisiana Sugar Planters' Assn.
The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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Spot authorization was set up on August 15, by the issuance of Priorities Regulation 25, Mr. Smith said. Under the regulation, manufacturers may receive permission to resume production of certain items by application to WPB field offices provided, however, that manpower, facilities, and materials are not needed for the war effort. Form WPB-4000 is used for such an application, accompanied by form WPB-3820 which concerns manpower. Spot authorization may be used to obtain permission to exceed the quota restrictions on sugar machinery provided for in Schedule 5-A of order L-292. Mr. Smith emphasized the fact that the priority rating and allotment symbol assigned under PR-25 will not be of great assistance at present. The regulation sets up a pattern of future procedure, however, to be used during the reconversion period.

Need For New Sugar Processing Equipment

The need for new sugar processing equipment will undoubtedly be greater in 1945 than in 1944, committee members believed. They pointed to a pent-up demand for machinery in many countries.

Mr. G. Burmeister of the War Food Administration described the probable needs for sugar machinery in various countries. Little information is available about Java and the Philippines. Destruction of machinery in Russia and Poland has been widespread. Throughout most of Europe, however, sugar production has been fairly well maintained even though sugar beets have been diverted for livestock feed and industrial alcohol. It does not seem likely that much machinery has been destroyed in France or the Balkans.

The demand for sugar has greatly increased in South America during the war, Mr. Burmeister said. Various South American countries are therefore interested in expanding their sugar production. Sugar producers in Cuba also wish to install new equipment.

Suggested Amendments to Order L-292

Distribution Controls. With the defeat of Germany, over-all cancellations in war contracts of 40 to 50 percent are expected, Mr. Smith stated. Labor and components will doubtless be available for civilian production. The General Industrial Equipment Division feels that, as an interim step prior to revocation of WPB orders such as L-292, distribution controls in the orders might well be removed. Committee members approved of a step which would enable them to get firm orders on their books.

Recommendation on Removal of Distribution Controls. After a short discussion, the committee recommended that distribution controls in order L-292 be removed.

Quota for Sugar Machinery. The present production restrictions in Schedule 5-A of order L-292 provide that rated orders for sugar machinery may be filled, Mr. H. A. Edge of the General Industrial Equipment Division said. He raised the question of how to formulate a 1945 quota for the industry to apply to domestic orders. It was suggested that the quota be twice the domestic rated orders for the last 6 months.

Committee Recommendation on Quota. The committee recommended that Schedule 5-A order L-292 be amended to provide a 1945 quota for sugar machinery. The quota, which applies only to domestic orders, will be twice the amount of domestic rated orders for the last 6 months. Repairs are not included in the quota.

Procedure for Farmer to Secure Ration-Free Sugar

We have had a number of requests for information concerning the procedure to be followed, by the sugarcane farmers and the processors, in making ration-free sugar available to the producer of sugarcane as provided for in O.P.A. regulations.

We are reproducing below the O.P.A. Revised R.O. 3 Amendment 46, September 30, 1944 as well as Form 2 (Sugar) Treasury Department, Internal Revenue Service. This latter form must be used to meet the certifying requirements of Revised R.O. 3, Section 1407.74 a (2) (b) (1). The Internal Revenue Form "Form 2 (Sugar)" must be secured from the Internal Revenue Office.

PART 1407—RATIONING OF FOOD AND FOOD PRODUCTS.
(Rev. RO, 3, Amdt. 46)
Sept. 30, 1944

Sugar

A rationale accompanying this amendment, issued simultaneously herewith, has been filed with the Division of the Federal Register.

1. Section 1407.69 is revoked.

2. Section 1407.73 is amended to read as follows:

§ 1407.73 *Consumer handicapped by transportation difficulties.* A consumer who, because of transportation difficulties, finds it a hardship to take delivery of sugar at the time, and in the amounts specified in § 1407.243 may apply to the Board for a certificate or ration coupons for 5, 10 or 15 pounds of sugar. The application must be made, in person or by mail, on OPA Form R-315, by the consumer personally, an adult member of his family unit, or an authorized agent. The Board, in its discretion, may grant the application. Before issuing a certificate or ration coupons, however, the Board shall detach from the book of the consumer a "sugar stamp" for each five pounds granted. (Stamps applicable to expired ration periods shall not be detached for this purpose.)

Section 1407.74 is amended to read as follows:

§ 1407.74 *Growers of sugarcane and sugar beets.* A consumer who has delivered sugarcane or sugar beets produced by him to a primary distributor for processing into sugar may apply to the Board for a certificate or ration coupons authorizing him to take delivery of sugar in an amount not in excess of 25 pounds for himself and 25 pounds for each member of his family unit. (Application shall be made for 5, 10, 15, 20 or 25 pounds.) The application must be made on OPA Form R-315 by the consumer personally, an adult member of his family unit, or an authorized agent. The Board, in a proper case, shall grant the application. At the time of granting the application, the Board shall detach from the Book of the consumer, and from the Book of each member of his family unit for which application is made, a "sugar stamp" for each 5 pounds of sugar granted to such person. (Stamps applicable to expired ration periods shall not be detached for this purpose.)

4. Section 1407.74a is added to read as follows:

1407.74a Sugarcane and sugar beet growers may get sugar without giving up evidences. (a) A consumer who produces sugarcane or sugar beets and delivers them to a primary distributor for processing into sugar may, without giving up ration evidences, acquire from the primary distributor, an amount of sugar not in excess of the smaller of the following:

(1) 25 pounds for each member of his family unit; and 25 pounds for each employee who works more than six months a year on the farm where the sugarcane or sugar beets were produced and for whom he regularly provides meals.

(2) 25 pounds for each acre of sugarcane of sugar beets grown on a farm where he resides or works more than six months a year and harvested from the "1944 crop".

However, if at the time of harvest more than one consumer eligible under this section is entitled to a share of that crop, the per acre allowance for such consumer may be no greater than the proportion of 25 pounds that his share of the crop bears to the total shares of all eligible consumers. (For example, if two share-cropping tenants, both living on a farm on which sugar beets are produced from the "1944 crop" entitled to 40 per cent and 60 per cent respectively of the crop, their per acre allowances would be 10 and 15 pounds respectively.)

(b) For a consumer to be eligible to get such sugar, the following conditions must be met:

(1) The Sugar must be sugar manufactured tax-free under section 402 (d) of the Sugar Act of 1937.

(2) The sugar cane or sugar beets must have been produced on a farm where he resides or works more than six months a year.

(3) The sugarcane or sugar beets must have been harvested from the 1944 crop grown on that farm. (As used in this section, the "1944 crop" of sugarcane means sugarcane harvested between October 1, 1944, and September 30, 1945, inclusive, and the "1944 crop" of sugar beets means sugar beets planted for harvest in the calendar year 1944, except that with respect to sugar beets grown in Yuma County, Arizona, in Imperial County, California, and in those parts of the Imperial and Coachella Valleys which are included in Riverside County, California, the "1944 crop" of sugar beets does not include sugar beets planted for harvest in the calendar year 1944 but includes sugar beets planted for harvest in the calendar year 1945.)

(c) A primary distributor may deliver an amount of sugar, not in excess of the amount permitted under paragraph (a) of this section, to an eligible consumer in exchange for a statement signed by him showing:

(1) His name and address and the date:

(2) Facts indicating that he is eligible under paragraph (b) of this section:

(3) The number of acres of sugarcane or sugar beets harvested from the 1944 crop grown on a farm where he resides or works more than six months a year; (if, at the time of harvest, more than one consumer, eligible under this section is entitled to a share of that crop, the applicant must state the proportion that his share bears to the total shares of all such consumers);

(4) The number of persons in his family unit (including himself), and the number of employes who work more than six months a year on the farm where the sugarcane or sugar beets were produced and for whom he regularly provides meals;

(5) The amount, if any, he or any member of his family unit has previously obtained under this section. (This amount when added to the amount stated under (6), must not exceed the total amount which the consumer may obtain under paragraph (a));

(6) The total amount of sugar he wishes to obtain.

The representations made in this statement constitute representations made to the Office of Price Administration.

(d) The primary distributor shall note on the statement delivered to him under paragraph (c) the amount of sugar delivered against the statement and shall retain all such statements at his principal business office until further order by the Office of Price Administration.

(e) Sugar may be obtained under this section only for the personal use of the consumer who obtains it or for the personal use of the members of his family unit or for use in the service of meals to his employees. The consumer or the members of his family unit may not sell, transfer, or deliver such sugar to any other person.

5. Section 1407.120 (d) is amended by adding the following sentence to the end thereof: In addition, he shall, when sending such check to the Washington Office, include a statement as to the amount of sugar delivered under § 1407.74a without getting evidences.

This amendment shall become effective April 6, 1944.

NOTE: All reporting and record-keeping requirements of this amendment have been approved by the Bureau of the Budget in accordance with Federal Reports Act of 1942.

(Pub. Law 421, 77th Cong.; E.O. 9125, 7 F.R. 2719; E.O. 9280, 7 F.R. 10179; WPB Dir. No. 1 and Supp. Dir. No. 1E, 7 F.R. 562, 2965; Food Dir. No. 3, 8 F.R. 2005, Food Dir. 8, 8 F.R. 7093.)

CHESTER BOWLES, *Administrator.*

Form 2 (Sugar)
TREASURY DEPARTMENT
INTERNAL REVENUE SERVICE

ORIGINAL

AFFIDAVIT OR CERTIFICATE OF PRODUCER OF SUGAR BEETS OR SUGARCANE

(To be executed in duplicate; one copy kept on the premises where the manufacturing is done, the other filed with manufacturer's return on which exemption is claimed (art. 206, Regulations 99).

I, _____, residing in the town (township) of _____,

county of _____, State of _____, swear (or affirm or acknowledge) that

I delivered to _____, located at _____

sugar beets or sugarcane, on the date and in the quantity shown below, to be manufactured for me; that I am the producer of the quantity of sugar beets or sugarcane so delivered; that I received the quantities and kinds of products derived from such manufacturing on the date as shown below; that such products are to be used solely for consumption by my family, employees, or household, and will not be sold, exchanged, or used for any other purpose; that the number of persons in my family, my employ, or my household is stated below:

SUGAR BEETS OR SUGARCANE DELIVERED TO MANUFACTURER NAMED ABOVE			PRODUCT RECEIVED FROM MANUFACTURER DERIVED FROM SUCH MANUFACTURING				NUMBER OF PERSONS IN MY FAMILY, EMPLOY, OR HOUSEHOLD
Kind	Date	Pounds	Name	Degrees or % total sugars	Date	Pounds	
Sugar beets		(1)					
Sugarcane		(1)					

(1) Does not include any quantities received from my tenant as rent or as his share of the crop.

Subscribed and sworn to before me this _____ day of _____, 194___

_____
(Signature and title of officer administering oath)

Acknowledged and subscribed in our presence this _____ day of _____, 194___

(Signed) _____

NOTE.—If the tax on manufacturing the amount of sugar beets or sugarcane shown above is $10 or less, this declaration may be signed and acknowledged before two subscribing witnesses in lieu of an oath.

_____ (Name of witness) _____ (Address)

_____ (Name of witness) _____ (Address)

Early Acceptance of Fertilizer Deliveries Urgent

Fertilizer consumption during the 1944-45 fiscal year promises to break all previous records. It can exceed by a considerable margin the 1943-44 consumption of approximately 12,000,000 tons. To do this will require the best efforts of all concerned, including manufacturers, dealers and farmers. But it can be done. The 1942-43 fertilizer consumption approximated 11,500,000 tons and in 1941-42 barely 10,000,000 tons of fertilizer was consumed. The five years previous to this fertilizer consumption ranged from less than 7,000,000 to more than 8,000,000 tons annually.

Farmers have in the past purchased their fertilizer, largely, during the first six months of the calendar year. But when faced with the increased demand created by abnormal war conditions manufacturers learned that their equipment, storage space and labor supply were inadequate to meet the situation unless production and deliveries could be extended over a longer period of time. Normally, approximately 85 percent of the fertilizer was delivered during the first six months and 15 percent during the last six months of each calendar year.

Necessity is bringing about a marked change in this situation. Manufacturers were forced to use their facilities to the utmost during the first six months in 1942 and again in 1943 to supply the demand. A year ago an appeal was made to the farmers to secure a great proportion of their annual fertilizer requirements during the last six months of the calendar year. The response was excellent and in the last half of 1943 more than 30 percent of the annual requirements was delivered.

Farm deliveries during the last half of 1942 amounted to nearly 2,000,000 tons compared to the normal of 1,500,000 tons. In 1943 deliveries during the last six months of the calendar year amounted to 3,500,000 tons. This afforded the manufacturers some relief during the first half of 1944, but not enough. They were taxed to capacity in delivering the 8,000,000 tons during the first six months of the year.

This trend towards early acceptance of fertilizers by the farmer must continue as long as consumption continues to increase at the present rate. There is no other way out. A factor which is now more acute than ever before is that trucks and tires are wearing out and deliveries are becoming increasingly uncertain. Not less than 4,500,000 tons of fertilizer should be delivered to the farmers of the nation by January 1, 1945.

U. S. RETAIL PRICE OF REFINED SUGAR AND ITS COMPONENT PARTS

Annual Averages—in cents per pound—1900-43

Calendar Year	Raw Sugar C & F Basis New York	Average Duty	Raw Sugar Duty Paid at New York	Refiners' Theoretical Margin	Refined Cane Sugar Net Cash at New York	Processing Tax*	Distributors' and Retailers' Spread	Retail Price	Calendar Year
1900	2.881	1.685	4.566	.754	5.320	——	.780	6.1	1900
1901	2.364	1.685	4.049	1.001	5.050	——	.950	6.0	1901
1902	1.857	1.685	3.542	.913	4.455	——	1.115	5.6	1902
1903	2.068	1.685	3.753	.885	4.638	——	.962	5.6	1903
1904	2.622	1.348	3.970	.802	4.772	——	1.128	5.9	1904
1905	2.930	1.348	4.278	.978	5.256	——	.744	6.0	1905
1906	2.338	1.348	3.686	.829	4.515	——	1.185	5.7	1906
1907	2.401	1.348	3.749	.900	4.649	——	1.151	5.8	1907
1908	2.716	1.348	4.064	.893	4.957	——	.943	5.9	1908
1909	2.649	1.348	3.997	.768	4.765	——	1.135	5.9	1909
1910	2.850	1.348	4.198	.774	4.972	——	1.028	6.0	1910
1911	3.031	1.348	4.379	.966	5.345	——	7.55	6.1	1911
1912	2.865	1.348	4.213	.828	5.041	——	1.259	6.3	1912
1913	2.220	1.348	3.568	.710	4.278	——	1.222	5.5	1913
1914	2.830	1.062	3.892	.791	4.683	——	1.217	5.9	1914
1915	3.593	1.0048	4.598	.961	5.559	——	1.041	6.6	1915
1916	4.778	1.0048	5.783	1.079	6.862	——	1.138	8.0	1916
1917	5.217	1.0048	6.222	1.441	7.663	——	1.637	9.3	1917
1918	5.487	1.0048	6.492	1.342	7.834	——	1.866	9.7	1918
1919	6.650	1.0048	7.655	1.340	8.995	——	2.305	11.3	1919
1920	11.350	1.0048	12.355	2.895	15.250	——	4.150	19.4	1920
1921	3.364	1.352	4.716	1.474	6.190	——	1.810	8.0	1921
1922	3.005	1.6412	4.646	1.284	5.930	——	1.370	7.3	1922
1923	5.278	1.7648	7.043	1.365	8.408	——	1.692	10.1	1923
1924	4.174	1.7648	5.939	1.373	7.312	——	1.888	9.2	1924
1925	2.565	1.7648	4.330	1.118	5.448	——	1.752	7.2	1925
1926	2.565	1.7648	4.330	1.133	5.463	——	1.437	6.9	1926
1927	2.948	1.7648	4.713	1.081	5.794	——	1.506	7.3	1927
1928	2.434	1.7648	4.199	1.325	5.524	——	1.576	7.1	1928
1929	1.993	1.7648	3.758	1.274	5.032	——	1.568	6.6	1929
1930	1.471	1.89	3.361	1.263	4.624	——	1.576	6.2	1930
1931	1.333	2.00	3.333	1.097	4.430	——	1.270	5.7	1931
1932	.930	2.00	2.930	1.060	3.990	——	1.110	5.1	1932
1933	1.220	2.00	3.220	1.096	4.316	——	1.084	5.4	1933
1934	1.499	1.52	3.019	1.104	4.123	.302	1.075	5.5	1934
1935	2.331	.90	3.231	1.085	4.316	.535	.849	5.7	1935
1936	2.694	.90	3.594	1.097	4.691	——	.909	5.6	1936
1937	2.534	.90	3.443	1.108	4.551	.178	.871	5.6	1937
1938	2.036	.90	2.936	1.010	3.946	.535	.819	5.3	1938
1939	1.905	1.077	2.982	1.055	4.037	.535	.858	5.43	1939
1940	1.886	.90	2.786	1.016	3.802	.535	.863	5.20	1940
1941	2.478	.90	3.378	1.009	4.387	.535	.788	5.71	1941
1942	2.988	.751	3.739	1.174	4.913	.535	1.372	6.82	1942
1943	2.99	.75	3.74	1.213	4.953	.535	1.345	6.83	1943

* Tax of .535c per lb. on refined sugar instituted June 8, 1934; eliminated January 6, 1936 by U. S. Supreme Court decision; reestablished by Act of Congress September 1, 1937.

The above table appeared in the *Lamborn Sugar Market Report* of September 12th which we acknowledge with due credit and compliment. The table constitutes a statistical history of sugar in the United States since the turn of the century.

The average man looks upon a table of statistics with the same attitude that he does a cross word puzzle. He starts out to work it but rarely completes the analysis. The table may be puzzling to some extent but any person engaged in the domestic sugar industry will find it very much worth while to make a careful study. We particularly recommend a study of the retail price each year from 1900 to date. This will show how very cheaply the American consumer has been getting his sugar.

The column on raw sugar prices, duty paid, will perhaps be the most directly interesting to a producer because it shows how much less the price of raw sugar has been in the war years as compared to the first thirty years of the Twentieth Century. In fact, the comparison of the retail price with the raw sugar price will show that the consumer is paying more at retail than most of the last forty-three years, except only the period affected by World War I. The relationship between the price of raw sugar and the retail price used to be more favorable to the consumer than it is today. Certainly the explanation lies in the increased efficiency of the production of sugar within the United States.

We recommend that you place the above table where it can be referred to readily. It should be important to keep the facts well in mind when the post-war program is being considered.

C. J. Bourg

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Western Division Meets

The Louisiana Sugar Producers' Club (Western Division) was held in New Iberia on November 3, 1944, with the following present:

J. Paulin Duhe, President, Duhe & Bourgeois Factory.
M. V. Yarbrough, Vice-President, Youngsville Factory.
John M. Caffery, Columbia Factory.
George L. Billeaud, Billeaud Factory.
Leon J. Landry, Iberia Sugar Coop.
Jules M. Burguieres, Cypremort Factory.
Serge Golodetz, Orange Grove Factory.
Mark Ginsburg, Orange Grove Factory.
Malcolm Duhe, Duhe & Bourgeois Factory.
W. F. Giles, Adeline, La.
J. C. LeBourgeois, Jr., New Orleans, La.
W. M. Grayson, U.S.D.A., Baton Rouge, La.
Sidney J. Bowles, Co. Agent, Lafayette, La.
Marcel J. Voorhies, New Orleans, La.

Mr. Voorhies reported on the efforts of the League to secure sufficient truck tires in the sugar area to meet the needs of the Industry. Mr. Taylor of the War Production Board, Dallas Office, made a survey of the belt and reported on the needs. The Office of Price Administration in New Orleans also reported on the needs of the industry. The League is making every effort to have a sufficient quantity of truck tires in the area available for certificate holders.

Mr. Voorhies also reported on the activities of the Molasses Committee in its efforts to have the purchasing restrictions imposed on the feed-trade removed so that Louisiana Molasses can move where needed at ceiling prices. Specific information required by Mr. Bourg must be furnished by the Molasses Committee in order that proper presentation of the problem can be made.

Mr. George L. Billeaud discussed the letter of Mr. Bourg to the Executive Committee with respect to the reported plan for the Commodity Credit Corporation to pay the Beet Processors up to 12½ cents per hundred pounds of sugar to cover the increased cost of 1944 over the costs of 1941.

Mr. W. M. Grayson reported that low purities are general and that the lowering of the knives does not seem to increase the quality of the sugar cane. The general impression is that the sugarcane is immature and will require cooler weather to improve in quality.

President J. Paulin Duhe suggested that the Mills West of the Atchafalaya seriously look into the possibility of securing a market for their bagasse to be converted into some usable product. All the mills could well convert to some other fuel.

The group requested the Secretary to write to all the mills of this group to find out if they might look with favor upon some plan to induce a buyer to locate a plant in the area and if they would consider their bagasse at a reasonable figure.

If enough mills feel favorably inclined a special committee will be appointed to look into this matter.

U. S. production of beet sugar for January through August totaled 47,000 tons. During the same period, 749,000 tons were distributed, thus reducing stocks of beet sugar from a total of 838,000 tons on January 1 to 136,000 tons on September 1. This is the lowest inventory recorded for this date by the Office of Distribution's Sugar Branch since 1935.—*W.F.A.*

Official Release

(Sugar for Packers)

Increased flexibility in the use of sugar by industrial users of rationed foods who pack, cure or process meats, fish or poultry was provided by the Office of Price Administration October 2, 1944.

Effective October 4, 1944, an industrial user, such as a meat packing house, may, over a quarterly period, average out his use of sugar for each class of meat products at the maximum rate permitted for that class.

Previously, rate of use of sugar for any product in a class could not exceed the rate for the class.

The greater flexibility, established upon the recommendation of the meat packing industry, will not substantially increase the over-all use of sugar in meat packing, processing and curing, OPA said.

Here is how the greater flexibility works:

Meat, fish and poultry items, for purposes of sugar rationing control, are divided into ten classes of products, such as dry cured pork products, sweet pickled pork products, etc., and the provisional use of sugar in the packing, processing and curing of each class is restricted to a specific rate per 100 pounds of unprocessed product.

For example, no more than one pound of sugar per 100 pounds could in the past, be used in the curing of any sweet pickled pork product in the class. As a result of the recent action, a user, if he desires, may use, say, three-quarters of a pound of sugar per 100 pounds of unprocessed product for the curing of picnic hams, and 1¼ pounds per 100 pounds for the curing of regular (skinned) hams, provided the average use for the quarter is not more than one pound per 100 pounds for all product of the class.

There is this additional proviso: The user may use sugar for, and include in the average, only those products in which he used sugar in either 1941, 1942 or 1943. Purpose of this restriction is to prevent a user from adding to his line a product for which he formerly did not use sugar, and in which he would use a relatively small amount so that averaging would permit him to increase to a considerable extent his use of sugar in other products in that particular class.

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The Fertilizer Outlook

(By the National Fertilizer Association)

The stepping up of the munitions program in recent months has affected superphosphate production and the supply of nitrogen available for use as fertilizer, according to The National Fertilizer Association. For many months the superphosphate industry has been getting a considerable quantity of sulphuric acid from Ordnance plants, but this supply has now been greatly curtailed. In fact, it is now indicated that the total superphosphate supply for the year may be less than last year, although not enough less to interfere seriously with the production of mixed fertilizers.

Fixed nitrogen produced in Government war plants was until recently being converted into nitrogen solutions for use in mixed fertilizers and into ammonium nitrate, but this nitrogen is now being used in munitions manufacture and the supplies of these materials available for fertilizer use this coming year will be very much less than last year unless there is a change in the munitions program.

Shipping priority has been granted for importing 850,000 tons of Chilean nitrate this year as compared with about 600,000 tons imported last year, and this increase will offset a considerable part of the reduction of other nitrogen supplies.

Labor is another factor which is tending to handicap the production of mixed fertilizers and certain materials. The labor situation is critical in the phosphate rock mines, in superphosphate plants, and in mixing plants in all parts of the country.

An early termination of the war in Europe would tend to increase fertilizer supplies. More sulphuric acid would be available for making superphosphate; more nitrogen solution and ammonium nitrate could be produced; and due to cut-backs in war plants more labor would be available to fertilizer plants. Fortunately there was a considerable carryover of mixed fertilizer from last season in many sections of the country, and mixing plants have been running to capacity all summer. It will therefore be possible for most if not all fertilizer companies to ship fertilizer for spring use this fall and winter if farmers will order it early and accept delivery. This was done last year with the result that many farmers got fertilizer who would not have gotten it otherwise. Early movement of fertilizer is more important this season than last.

There is every assurance that the total potash supply will be equal to total demand, but the supply of sulphate of potash may be short in a few areas. It is also possible that in some localities where an unusual demand has developed during the past two or three years the total potash supply available for that locality may be insufficient. It is the general belief, however, that nearly everywhere the supply will be adequate for use in mixed fertilizers of any desired potash content and for direct use also.

Production of cane sugar in the mainland area during the first 8 months of 1944 was 84,000 tons, and arrivals in the United States from off-shore areas totaled 3,746,000 tons—making a total of 3,830,000 tons for the period. Distribution, on the other hand, totaled 4,181,000 tons. This excess of distribution over production and arrivals, after minor adjustments, reduced stocks of cane sugar from the 928,000 tons on hand January 1 to 545,000 tons on hand September 1.—*W.F.A.*

Entries of Sugar From Offshore Areas Through September 30, 1944

The War Food Administration reports that the quantity of sugar entered for consumption from all offshore areas during January-September amounted to 4,197,739 short tons, raw value. For the corresponding period last year the quantity entered totaled 3,643,980 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 225,654 short tons of sugar, raw value was marketed by the mainland cane area and 749,595 tons by the continental beet area during January-August, 1944, as compared with 196,672 tons and 1,090,220 tons, respectively, during the same period of 1943.

Area	Quantity entered through Sept. 30 (short tons—96° equivalent
Cuba	2,792,504*
Hawaii	630,295
Puerto Rico	697,836
Foreign countries other than Cuba	74,409
Virgin Islands	2,695
Total	4,197,739

* Does not include sugar equivalent of invert molasses produced and shipped in lieu of raw sugar at the request of agencies of the United States Government.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against foreign Competition

Vol. 23 NEW ORLEANS, LA., DECEMBER 1, 1944 No. 5

Cuban Prices

By C. J. Bourg

Reports appearing in sugar trade journals and market letters declare that the Cubans have been offered by the U. S. Government a price of 3¢ per pound of raw sugar f.o.b. port in Cuba, for the 1945 crop. It is also reported that blackstrap molasses of the 1945 crop will be purchased at 13.6¢ per gallon f.o.b. port in Cuba, the same price as was paid on the 1944 crop molasses.

A price of three cents on raw sugar would mean an increase of .35 above the price of 2.65¢ per pound paid by the U. S. Government for the 1944 Cuban crop of raw sugar.

Domestic producers have every reason to expect that any higher price paid for foreign sugars shall become the basis for a corresponding increase in the ceiling price for market sales of domestic sugars; otherwise, such a transaction would have the effect of reducing the tariff by indirection.

These reports lead us to review as pertinent the remarks of Senator Arthur H. Vandenberg on the 12th of June 1944, appearing on page 5863 of the Congressional Record from which we quote the following:

" . . . When the Commodity Credit Corporation first began to purchase the Cuban crops of sugar it brought the crop in, paid our duties on it, and then sold it for refining purposes to refiners at the duty-paid price. Subsequently, the price was changed, and inasmuch as the transaction involved the Government exclusively, certain powers were exercised under an old statute, namely, the statute of June 30, 1940, suspending all tariffs on commodities brought into the United States by the Government to be disposed of under Government auspices. Therefore, at the present time I understand that the Commodity Credit Corporation is importing Cuban sugar duty free, and then selling it to the refiners at the duty-paid price.

"So far as the Government is concerned, of course, it is not out of pocket on a transaction of that kind. So far as the Government and the Congress are concerned, the device simply increases the funds of the Commodity Credit Corporation, inasmuch as it no longer has to pay into the General Treasury the tariff duties which the law requires to be paid upon Cuban imports into the United States.

"The point I wish to make very clear is this: As to the practice to which I have referred the Cuban sugar interests have clearly indicated in current publications that they think that inasmuch as the Government has now suspended the collection of tariffs on Cuban sugar, they should be entitled to the proceeds. They also clearly indicate that they believe that when the present emergency has passed, and emergency purchases by the Government have ceased, the existing duty-free arrangement should be continued in their favor. There is not much doubt concerning their expectations with regard to this subject. I have before me a copy of the Weekly Statistical

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Sugar Trade Journal of June 8, 1944. I particularly refer to a paragraph headed "Duty Free?"

"* * * I shall not take the time of the Senate to read in detail the statement which I have just received unanimous consent to have printed in the Record. I simply summarize it by saying that the whole argument is that now, at long last, our own Government has set the pattern for giving Cuba the price it thinks it should have on its sugar with reference to the American price. I merely assert, at least for myself, that any temporary tariff cancellations—proper under the law—shall not be used as a basis for import subsidies, or as a basis for a post-war precedent in respect to our tariffs.

"* * * I am raising the question not because I believe there is a remote basis for the Cuban claim or expectation. I wish to make it plain, however, that such expectation exists, and that it is based upon the present practice of the Commodity Credit Corporation in respect to the cancellation of duties on Cuban sugar. I am doing precisely what the Senator from Colorado has indicated. I am asserting my own belief that there is no basis under the act, or under existing emergency importations, for any contemplation which would justify any Cuban claim to a benefit from the cancelled tariffs, now or hereafter. . . ."

Molasses Market Stabilized

Price declines in the blackstrap molasses market during recent weeks brought the price down temporarily to 16 cents per gallon Nov. 6 to 17th, inclusive. This was particularly disturbing because for the past two seasons the ceiling price of 18 cents per gallon had been received by Louisiana producers for their entire production.

At the request of the American Sugar Cane League, the entire Louisiana Congressional delegation protested the restrictions placed on the sale of blackstrap molasses by Conservation Order M-54 which were having the effect of lowering the price by preventing sales direct to feed manufacturers by processors who did not have storage facilities on the plantations. The Commodity Credit Corporation also complained to WPB authorities the direct effect of any reduction in the average price of molasses upon the returns to producers of sugarcane.

Upon these representations, the WPB has issued a Direction* under which certificates are being issued to manufacturers of mixed feed by the Feed Management Branch of WFA for the purchase of 3,000,000 gallons of Louisiana blackstrap molasses, providing such certificates are used prior to midnight December 31, 1944.

It will be noted that the Direction gives general authorization, without mentioning any specific number of gallons. This will permit further action should it be found that more than 3,000,000 gallons are needed to restore completely the ability of producers to market molasses for which there is no plantation storage facilities. However, Government officials are depending upon the Louisiana industry to facilitate and supervise the distribution of molasses between now and December 31 so that full use will be made of storage facilities and all surplus molasses marketed.

Market reports indicate that the price of molasses has already firmed up to 17½ cents per gallon.

*Direction appears on page 38.

Mechanization Essential to Further Reducing the Unit-Cost of Production!

By C. J. Bourg

The future of the domestic sugar industry depends upon a lot of things. The American Sugar Cane League and our Senators and Congressmen, in co-ordination, have been looking forward to ascertain the best means of insuring the industry's future. Determinations of post-war Government policy may have to wait until the war ends or until 1946, when the Sugar Act expires. Meanwhile, the industry can do some important home-work.

In the midst of the grinding season, when we are daily confronted with the problems of improving production methods in field and factory, we are able to comprehend better the importance of increased efficiency for the future. En passant, we derive much encouragement from the progress made by the Louisiana sugar industry during the past two decades. Thinking back twenty years, any grower can derive satisfaction and confidence that the industry will meet the crises ahead as successfully as it has met other tests in the intervening years.

Presently, we are confronted by advanced costs of production and by scarcity of labor, even at higher rates of pay. The ceiling price on sugar has not been raised in proportion to added costs. Instead, incentive payments have been offered to growers. Eventually in the post-war period re-adjustments will be necessary, and the industry will have to meet the test of being able to reduce to an extreme minimum the unit-cost of production per ton of cane and per pound of sugar. Certainly mechanization offers the most hopeful channel to the highest order of efficiency, assuming continued progress in the development of improved seed varieties.

Senator John H. Overton and your Washington Representative having discussed these matters at length, the Senator introduced and secured the approval by Congress of an appropriation of $40,000 for the purpose of conducting research on the various types of sugarcane farming equipment, based on the progress made by individuals in developing harvesting machines, loading machines, windrowing machines, flame cultivators and other mechanized equipment.

Senator Overton had first conferred with officials of the Department of Agriculture to determine the scope of a program by which Government engineers might assist the sugarcane growers and local manufacturers in making improvements. He knew that the great manufacturers of farm machinery for national distribution have necessarily concentrated their research and operations on equipment for which there is general demand and use in large areas of the country. Sugarcane machinery is highly specialized and the use is limited. In fact, equipment which operates successfully in Louisiana often cannot be used in Florida or in the domestic Islands; and vice versa. The Louisiana sugar industry is extremely grateful for the work and contributions made by the several individuals who have had the vision, the industry and the courage to produce mechanized equipment up to the present stage of efficiency. We entertain the hope that the USDA research program will assist them in further production and improvement.

The designated purposes for which funds were appropriated through the Overton Amendment were in very general terms. The Bureau of Plant Industry, Soils, and Agricultural Engineering has been assigned the duty of determining what the program will be. This bureau has already contributed valuably towards the greater efficiency of sugarcane production by development of better farming and disease-control methods and by providing growers with new hybrid seedling varieties of sugarcane, constantly improving the varieties from year to year. We have every confidence that the Bureau will continue to cooperate with the American Sugar Cane League and its Committees as thoroughly and as successfully in connection with the mechanization program as it has on the seedling varieties program.

Sugar Cane Machinery Research Program

By R. M. Ramp, Engineer, Division of Agricultural Engineering, Bureau of Plant Industry, Soils and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

In June, 1944, Congress appropriated $40,000 for research work on sugar cane machinery for the primary purpose of reducing the cost of growing and harvesting sugar cane by means of mechanization.

The undertaking of any research program involves a review of all data and a close co-ordination of field observations and verification tests. The object of the research work is to develop new methods and machine devices for the most economical utilization of labor and equipment to reduce production costs and crop hazards. To carry out this object it is first necessary to determine the basic problems which are fundamental to the growth and harvesting of sugar cane. For example, one of the fundamental problems in harvesting is the cutting of bottom and top of the cane. Various methods of performing this operation are to be investigated to determine power requirements as well as efficiency and reliability of the various types of units. From this information, new methods may be developed which will be helpful to the farmers and to the manufacturers of sugar cane machinery.

The Government will not enter into the production of new equipment or machine devices for sale. The research work is to be conducted to obtain data for the development of new machinery and new methods which will be of help to the producers and users of sugar cane machinery. It will be up to the sugar cane machinery manufacturers to convert such research data into the development of commercial machines. All patentable machine devices developed by the Government from public funds will be retained by the Government under public use patents. A public use patent gives all mmanufacturers an equal opportunity to use the new development as they see fit without payment of royalty for patent rights.

The various farm practices and methods of harvesting are to be studied to determine their advantages and wherein they can be improved. From the field observations made to date it is evident that there is no one method which will fit all sizes of farms and

production methods. The scope of the machinery research project will cover all machinery problems related to the production and harvesting of sugar cane. The work will include experiments and tests of equipment on weed control, borer control, cultivation, fertilization, ditching, planting, harvesting and freeze control to determine the advisability of inaugurating new farming methods.

Entries of Sugar from Offshore Areas through October 31, 1944

The War Food Administration reports that the quantity of sugar entered for consumption from all offshore areas during January-October amounted to 4,652,814 short tons, raw value. For the corresponding period last year the quantity entered totaled 3,643,980 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 228,902 short tons of sugar, raw value, was marketed by the mainland cane area and 859,122 tons by the continental beet area during January-September, 1944, as compared with 199,339 tons and 1,242,152 tons, respectively, during the same period of 1943.

Area	Quantity entered through October 31 (short tons—96° equivalent)
Cuba	3,168,614[1]
Hawaii	697,168
Puerto Rico	703,135
Foreign countries other than Cuba	81,202
Virgin Islands	2,695
Total	4,652,814

[1] Does not include sugar equivalent of invert molasses produced and shipped in lieu of raw sugar at the request of agencies of the United States Government.

DIRECT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through October 31.

Area	Quantity entered through October 31		
	Sugar Polarizing 99.8° and above	Sugar Polarizing less than 99.8°	Total
	(short tons, 96° equivalent)		
Cuba	306,958	12,065	319,023
Puerto Rico	69,285	7,362	76,647
Hawaii	0	725	725
Total	376,243	20,152	396,395

ENTRIES FROM FULL-DUTY COUNTRIES

Area	Quantity entered through October 31[1] (pounds)
Dominican Republic	77,884,498
Dutch East Indies	1,310,451
French West Indies	51,194,117
Haiti	32,014,303
Total	162,403,369
Tons	81,202

[1] Excluding the first 20,000 pounds entered from each area. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

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Progress Report of Unreleased Seed Cane Varieties

Complying with the recommendations of the Contact Committee of the American Sugar Cane League and the two cooperating experiment stations with respect to increase of varieties of unreleased seed cane at the secondary increase stations and the introduction of the new varieties recommended for increase, special effort was made to visit all of the increased plots of cooperators.

By mutual agreement with the Federal Experiment Station, efforts were also made to have the excess supply of promising varieties increased at the test fields under the supervision of the Houma Experiment Station. These increases are to be supervised by the American Sugar Cane League and are to become, in fact, secondary increase seed stations.

During the course of the past sixty days, Mr. Edward P. Munson, Supervisor in Charge of the increases of unreleased seed cane varieties for the American Sugar Cane League, has visited the following secondary increase seed plots, as well as the primary stations and the two experiment stations in his efforts to carry out the recommendations of the Contact Committee.

The following is a rough tabulation of the visits made:

The week of October 2: Triangle Farms, Palo Alto Company, Clarence J. Savois, Little Texas, Inc., E. G. Robichaux Company, Caldwell Sugars, Standard Division Realty Operators, Southdown Primary Station, McCollam Bros., J. Wilson Lepine, Caldwell Sugars, Valentine Sugars, and the Houma Experiment Station. The Annual Meeting of the Iberia Sugar Cooperative was also attended.

The week of October 9: Angola Penal Farm, Brunswick Plantation, Smithfield Primary Station, Caldwell Sugars, Little Texas, Inc., Palo Alto Company, Clarence J. Savoie, and Triangle Farms.

The week of October 16: F. A. Graugnard & Sons, San Francisco Planting & Manufacturing Company, Standard Division Realty Operators, E. G. Robinchaux Co., Ltd., Godchaux Sugars (Raceland), Ed Dufresne, A. Wilbert's Sons, McCollam Bros., Houma Federal Experiment Station, Southdown Primary Station, and San Francisco Pltg. & Mfg. Co.

The week of October 23: Maryland Company, South Coast Corporation Oaklawn Plantation, Delgado Albania Plantation, Roland Farms (Charles Caldwell), Lionel Kling, George L. Billeaud, Leon J. Landry, Dr. J. L. Beyt, Levert-St. John, Inc., Howard J. Olivier, Hugh Junca, Baton Rouge Experiment Station, and A. Wilbert's Sons.

The week of October 30: New Orleans office and office work.

The week of November 6: Valentine Sugars, Cloverly Farms, Inc., McCollam Bros., Realty Operators Southdown Primary Station, Houma Federal Experiment Station, Godchaux Sugars (Raceland), Brunswick Farm, Smithfield Primary Station, New Orleans office, and Realty Operators Standard Division.

The week of November 13: Alma Plantation, A. Wilbert's Sons, Delgado Albania Plantation, Leon J. Landry, Dr. J. L. Beyt, and George L. Billeaud.

The week of November 20: Glenwood Farm, New Orleans office, Delgado Albania Plantation, Ro-

land Farms (Charles Caldwell), South Coast Oaklawn Plantation, Realty Operators Southdown Primary Station, and McCollam Bros.

The secondary stations are being visited and the acreage of each variety ascertained and plotted. The establishment of the Secondary Increase Stations adjacent to the test fields can be made only as fast as the surplus seed cane is made available by the Experiment Station. As soon as that is completed we shall have a complete report with respect to varieties, acreage and location of all unreleased varieties under the supervision of the American Sugar Cane League.

There are presently growing under American Sugar Cane League supervision at the primary and secondary increase seed plots, 66 varieties of promising unreleased seed cane.

We are listing below the secondary and primary increase plots and the number of unreleased varieties being grown by each.

Names	Varieties
Angola Penal Farm	12
Dr. J. L. Beyt	6
Caldwell Sugars	11
Ed. Dufresne	7
Triangle Farms	3
F. A. Graugnard & Sons	16
Hugh Junca	10
Lionel Kling	12
J. Wilson Lepine	15
Little Texas Company	14
McCollam Bros	9
Maryland Company	12
Howard J. Olivier	12
Palo Alto Farm	14
Estate E. G. Robichaux	16
Godchaux Sugars (Rosewood)	7
San Francisco P. & M. Co.	15
Clarence J. Savoie	11
Brunswick Farm	14
Valentine Sugars	15
A. Wilbert's Sons	16
Southdown Primary Station	46
Smithfield Primary Station	33
Leon J. Landry	28

The above tabulation does not include all of the secondary increase stations which are being established adjacent to the test fields.

The inspection work to be carried on henceforth is now being discussed with the two experiment stations.

—Edward P. Munson.

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Farm Bureau Federation Sugar Resolution

The following resolution was adopted by the Annual Meeting of the Louisiana Farm Bureau Federation held on the Campus of Louisiana State University, Baton Rouge, Louisiana, November 14th and 15th, 1944.

"WHEREAS, it has been proven that sugar is essential to the effective prosecution of the war both for military requirements and civilian needs and it is likewise essential to the welfare of our people during the era of peace that will follow, and

WHEREAS, during the last 25 years it has been demonstrated on two occasions that the welfare of the people of the United States rested on the production of continental sugar, and

WHEREAS, in order to uphold the standard of living in this country and to improve the economic well being of other countries,

BE IT RESOLVED, that the Agricultural economy of this country not be sacrificed to the industrial expansion of the export markets; that foreign countries should be encouraged to expand industrially to increase their purchasing power to enable them to take our surplus agricultural and industrial products."

WFA Announces 1945 Production Program

The 1945 national production program, suggesting about the same total crop acreage as was planted this year, to be submitted to State agricultural leaders for their determination of State goals at meetings beginning November 20, was announced recently by War Food Administrator Marvin Jones.

"The food production job for next year will be as important to the war and to the peace as it was in 1944," War Food Administrator Marvin Jones said. "Some shifts in the pattern of production will be needed in line with changing demand situations, but the total needs will continue to be great. We must make certain that we have plenty for our armed forces, for civilians, for our Allies and for relief needs.

"To allow a margin of safety in case of adverse weather, and to assure maintenance of our reserve stocks, we will need to plant about the same total acreage as in 1944. We cannot risk the possibility of a shortage. We are planning to have enough in total, with full consideration for all factors, and we know we can count on farmers and ranchers to meet the necessary goals."

Suggested total crop acreages for 1945, although smaller than the goals for 1944, amounts to nearly 364 million acres, as compared with an estimated 360 million planted acres in 1944. The individual goals provide a continuance of 1944 levels for most of the more important crops. Goals are somewhat below 1944 plantings for some crops and somewhat above 1944 in a few cases where prospective demand still requires adjustments upward.

Livestock goals call for slight increases in number of pigs farrowed, in milk production, and in cattle slaughter—to reduce total cattle numbers. They suggest a decrease of about 16 per cent in egg production.

A series of State meetings, at which local farm representatives and agricultural leaders will determine the State goals, will be held during the period November 20 to December 15. Representatives of the War Food Administration will be present at the meetings to discuss questions of production, marketing, price support, materials and facilities and other factors related to the 1945 production program.

After the States have determined their individual production goals, the War Food Administration will announce the resulting national totals. If the demand situation changes materially before planting time, WFA will suggest desirable modifications in state and national goal levels.

The suggested national goals for crops and for livestock and livestock products are listed in the following tables:

CROP GOALS: 1945 Acreage with Comparisons

Commodity	Planted Acreage (Thousands)			% 1945 Goal is of	
	1935-39 Average	1944 Indic.	1945 Goal	1935-39 Average	1944 Indic.
Food and Fiber Crops					
Wheat	73,235	66,705	67,640	92	101
Rye[1]	3,699	2,325	2,515	68	108
Rice	1,007	1,490	1,400	139	94
Dry Beans	1,917	2,340	2,340	122	100
Dry Peas	281	746	457	163	61
Soybeans for Beans[1]	3,042	10,688	10,688	351	100
Flaxseed	1,938	3,285	5,000	258	152
Peanuts, Grown Alone	2,173	4,169	4,000	184	96
Peanuts, Picked and Threshed[1]	------	(3,434)	(3,300)	----	96
Cotton	28,496	20,472	20,472	72	100
Broomcorn	317	372	370	117	99
Sugar Beets	892	646	951	107	147
Sugar Cane (except sirup)[1]	287	304	337	117	111
Potatoes	3,123	3,084	3,100	99	101
Sweet Potatoes	804	829	829	103	100
Truck Crops: Fresh[1]	1,745	1,852	1,683	96	91
Processing	1,383	2,086	2,010	145	96
Tobacco:[1] Flue-cured	981	989	1,023	104	103
Burley	371	470	480	129	102
Other Domestic	292	227	264	90	116
Subtotal—Food and Fibers	125,983	123,079	125,559	100	102
Feed Crops					
Corn	97,055	99,606	99,606	103	100
Oats	40,586	44,023	44,023	108	100
Barley	13,364	14,483	14,483	108	100
All Sorghums (except sirup)	15,029	17,752	16,740	111	94
Subtotal—Feed Crops	166,034	175,864	174,852	105	99
TOTAL—Cultivated Crops	292,017	298,943	300,411	103	100
Hay and Hay Seeds[1]					
All Tame Hay	55,770	60,427	62,838	113	104
Hay Seeds—Legume[2]	2,735	4,394	4,746	174	108
Cover Crop Seeds[3]	120	340	469	391	138
Subtotal—Hay and Hay Seeds	58,625	65,161	68,053	116	104
GRAND TOTAL—Crop Acreage[4]	347,907	359,710	363,718	105	101

[1] Harvested.
[2] Includes Alfalfa, Red, Alsike, Sweet and Ladino Clover, and Lespedeza.
[3] Includes Hairy Vetch, Common and Willamette Vetch, Austrian Winter Peas, Crimson Clover, Common Ryegrass.
[4] Excluding Hay Seeds.

LIVESTOCK GOALS: 1945 Numbers and Production, with Comparisons

Commodity	1935-39 Average	1944 Indic.	1945 Goal	% 1945 Goal is of 1935-39 Average	% 1945 Goal is of 1944 Indic.
Livestock and Livestock Products					
Milk Cows on Farms (Av. for yr.)	23,548	26,112	26,347	112	101
Hens & Pullets on Farms (Jan. 1)	364,400	515,000	420,000	115	82
Chickens Raised	664,400	745,800	700,000	105	94
Broilers, Commercial	69,700	213,000	213,000	306	100
Turkeys Raised	27,000	35,666	35,666	132	100
Pigs Saved: Spring	41,872	55,925	57,000	136	102
Fall	26,767	32,000[1]	33,000	123	103
Beef Cattle on Farms (1st of yr.)	31,400	41,300	39,200[2]	125	95
Beef Cattle on Farms (end of yr.)	32,000	39,200	36,900	115	94
Cattle and Calf Slaughter	24,600	33,900	35,000	142	103
Sheep & Lambs on Farms (Jan. 1)	51,462	51,718	50,000	97	97
Milk Prod. on Farms (000 lbs.)	103,624	118,200	120,000	116	102
Egg Prod. on Farms (000 doz.)	3,032	4,676	3,920	129	84

[1] Ten-year (1933-42) average pigs per litter used to compute number of pigs saved fall of 1944.
[2] Number expected January 1, 1945.

Release of Molasses for Manufacture of Mixed Feed

Effective Nov. 25, 1944
(In Federal Register as of Tuesday, Nov. 28.)

TITLE 32—*National Defense—Chapter IX—War Production Board—Part 3293—Chemicals*

Direction 1 to Conservation Order M-54

(a) *What this direction does.* This direction authorizes suppliers of molasses (producers, primary distributors, secondary distributors and importers as defined in Order M-54) to distribute a limited quantity of molasses to Class 2 purchasers (as defined in that order) for the manufacture of mixed feeds, upon receipt of a WFA (War Food Administration) certificate. The direction also tells the Class 2 purchasers how to acquire this molasses free of the quarterly quota restrictions set forth in paragraph (c) (1) (ii) of Order M-54. Molasses acquired under this direction may be used by a Class 2 purchaser, free of the quarterly consumption quota restrictions in paragraph (e) (1) of Order M-54. No Class 2 purchaser may acquire or use molasses under this direction, free of the quota restrictions of M-54, unless he obtains a WFA certificate.

(b) *Procedure governing deliveries.* Any supplier may deliver molasses to a Class 2 purchaser without

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regard to the quantity of molasses which such purchaser may acquire under paragraph (c) (1) (ii) of Order M-54, and without receiving from the purchaser the certification required by paragraph (c) (2) of that order, provided that the supplier receives instead from the purchaser a WFA certificate, stating that the purchaser is entitled to receive a specified quantity and kind of molasses for the manufacture of mixed feeds. This direction is the supplier's authorization to make that delivery upon receipt of the WFA certificate. No supplier may deliver a greater quantity or a different kind of molasses to a Class 2 purchaser under this direction than the quantity and kind specified on the WFA certificate.

(c) *Procedure governing acquisition and use of molasses under this direction.* Any Class 2 purchaser desiring to acquire molasses in excess of the quantity permitted under paragraph (c) (1) (ii) of Order M-54 should apply for permission to do so by letter addressed to the Feed Management Branch, War Food Administration, Washington 25, D. C. If War Food Administration determines that the application should be granted, it will issue a WFA certificate to the purchaser entitling him to receive and use a specified quantity and type of molasses for the manufacture of mixed feeds. The Class 2 purchaser may then place a purchase order for the specified quantity and kind of molasses with a supplier and he must surrender his WFA certificate to the supplier. A Class 2 purchaser acquiring molasses in this manner may use it for the manufacture of mixed feeds without regard to the restrictions of paragraph (e) (1) of Order M-54. No beet molasses may be used for the manufacture of mixed feeds as provided in paragraph (c) (5) of Order M-54.

(d) *Time limit on use of WFA certificate.* After midnight December 31, 1944, no WFA certificate issued pursuant to this direction may be used to get molasses, and no supplier shall accept any such certificate after that date. In some instances, WFA certificates may state on their face that they expire before that date, in which case the certificate may not be used by the purchaser or accepted by the supplier after the expiration date appearing on the certificate.

Issued this 25th day of November, 1944.

WAR PRODUCTION BOARD,

(Signed) By J. Joseph Whelan,
Recording Secretary.

Preliminary Sugar Statistics for First Ten Months of 1944

Distribution of sugar by the primary distributors in the United States in October and during January-October, 1944, compiled from weekly data submitted by distributors, as compared with final figures for the corresponding period of 1943, was as follows:

	1944[1]		1943	
	(short tons, raw value)			
	Oct.	Jan.-Oct.	Oct.	Jan.-Oct.
Refiners	485,785	4,739,844	428,853	3,878,254
Beet Processors	111,925	971,047	103,928	1,346,080
Importers	42,606	440,445	62,371	430,398
Mainland Cane Mills	4,148	96,042	6,169	92,804
Total	644,464	6,247,378	601,321	5,747,536
Deliveries for Export	8,287	273,891	28,992	389,507
For consumption in continental U. S.	636,177	5,973,487	572,329	5,358,029

Stocks reported by the distributors as of November 4, 1944, as compared with final October 31, 1943, stocks were as follows:

	1944[1]	1943
	(short tons, raw value)	
Refiners raws[2]	228,379	392,404
Refiners refined	85,835	158,856
Beet Processors	347,293	466,352
Importers	12,187	102,569
Mainland Cane Mills	2,327[3]	21,130
Total	676,021	1,141,311

[1] Preliminary.
[2] Includes 38,302 tons of sugar in Continental U. S. but reported by refiners as in stock on October 31, 1943, and a comparable item for 1944.
[3] Direct-consumption sugar only.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against Foreign Competition

Vol. 23 NEW ORLEANS, LA., DECEMBER 15, 1944 No. 6

Consumer Group Makes Recommendation

By C. J. Bourg

Among the many Industry Committees which have been created to advise and co-operate with the Government on an industry basis, is the Food Industry War Committee. This Committee has submitted a report on the sugar situation which deserves to receive the attention and study of all agencies of the Government, as well as the consumers and producers of sugar.

The report is apparently the result of a very thorough inquiry into the production and distribution of sugar. It contains tables (1) on stocks, indicated new-crop production and stock replenishment in Continental United States from October 1944 through September 1945; (2) prospective supplies and indicated sources of supply; (3) probable distribution of each source of supply; (4) stock position on September 30, 1945.

Great significance will naturally be given by all who read this report, to the emphasis which the Committee places upon the two major causes of current shortages of sugar, stated to be "inadequate assignment of ships to bring in raw sugar that is available in the off-shore areas, and insufficient Continental production of beet and cane sugar".

From war to war, domestic producers have urged upon Congress and upon national administrations the importance of Continental production, which always becomes perfectly apparent in war time. For reasons which have never been fully explained, certain Government officials have sought to minimize this fact and to have it appear that the sugar industry is only engaged in "special pleading". Now, we have in the Food Industry War Committee a consumer group whose primary interest in sugar is to buy it at a low price and in adequate quantity. Food manufacturers are buyers and consumers of sugar who are always conscious of prices; therefore, when they recognize and publicly declare that the production of sugar in the Continental United States is of the greatest importance — in addition to securing an adequate assignment of ships to bring in sugar from off-shore areas—we certainly have the best evidence from an unimpeachable source.

In the old days preceding World War I and for several years thereafter, there were so-called Consumer Committees who preached about the advantages of getting more foreign sugar cheaper. These groups were exposed in each case as having been formed by foreign investors or banking interests who financed the employment of high-priced lawyers and publicity agents, functioning under some "consumer" name.

In 1944 we note encouragement for the future, because we find real consumers and large buyers of sugar submitting recommendations to improve conditions with respect to the production and distribution of sugar within the United States. The report of the Food Industry War Committee is signed by offi-

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THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

MARCEL J. VOORHIES, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

in which are consolidated

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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cials of five well-known manufacturers whose products contain sugar and have wide distribution.

Their recommendations, as a whole, can be said to be broadly sound and constructive from the standpoint of consumer, of producer, and of Government.

Concerning Louisiana sugar, the report says:

"Production of mainland cane sugar—the cane sugar grown in the United States—can be increased under war conditions only with Government assistance in the way of financial support programs that would facilitate the obtaining of adequate labor by growers for the planting and harvesting of crops. The Government has done this for the present crops. With favorable weather and continued Government support, increased production is expected for the 1945-46 crops.

"We recommend also that consideration be given to the need of priorities for essential equipment and material needed by processors."

The general recommendations are:

Unless constructive action is taken quickly by all Government agencies having any responsibility for formulating sugar policies, we face a particularly difficult situation in distribution of sugar to the consumers of the United States during the first nine months of 1945.

1. The most vital need is that action be taken at once to provide adequate shipping to bring in raw sugar so that refineries can operate at uninterrupted capacity.

2. All possible steps should be taken to encourage maximum sugar production in the United States in 1945 for which ocean shipping is not required

3 Increased production in off-shore areas should be stimulated to provide increased sugar for 1946.

4. The Government should give domestic refiners assistance on manpower and necessary equipment priorities.

5. The present rationing and allocation program should be revamped so that it can be administered more effectively, thereby avoiding loose and illegal distribution of sugar.

6. No sugar should be diverted to high test molasses to make industrial alcohol.

Besides the six major recommendations set forth above, the Committee makes six additional recommendations that supplement the earlier proposals:

1. Governmental agencies charged with sugar control should measure, as accurately as possible, the over-all supply of sugar for 1945, including the carryover.

2. Similarly these government agencies should agree on realistic estimates of our requirements, taking into account administrative problems in controling sugar distribution. For example, in 1944 sugar deliveries are running about 750,000 tons above original estimates of requirements.

3. We recommend that the Armed Forces study their requirements carefully so they will be certain to have a sufficient quantity, but avoid building up a needlessly high stock pile.

4. Government agencies should measure our domestic sugar needs carefully before assigning sugar for distribution to our allies, United Nations Relief and Rehabilitation Administration (UNRRA) and Lend-Lease. While the objective of supplying sugar to these groups is commendable, there is no reason why it should be done at too great a sacrifice to the United States consumers of sugar and sweetened prod-

ucts. Domestic consumption, under the rationing systems, already has been drastically curtailed.

5. We should avoid, as much as possible, bringing refined sugar to the United States for trans-shipment abroad. We should utilize the refining capacity in Cuba for direct shipment from Cuba to its final destination for at least a portion of Army, Lend-Lease and UNRRA sugar requirements. Also raw sugar supplies might be sent direct to North Africa, France or Belgium for refining.

6. We should make certain that every possible pound of European beet sugar production is utilized to lighten the relief load on Western Hemisphere sugar supplies.

Information From the Louisiana Sugar Cane Technologists Association

The Executive Committee of the Louisiana Sugar Cane Technologists' Association decided on December 1, 1944, to establish the publication of a *Quarterly Bulletin* for the benefit of all the association members. The following articles are taken from the first *Bulletin* issued by the Association:

Too Much Cultivation?

(*From Australian Sugar Journal, Vol.* 34, *p.* 5. *Aug.* 14, 1944)

In all settled countries innumerable field experiments have been made with artificial fertilizers and the number of such tests is still increasing, but experiments in cultivation were hardly ever made; yet the costs of cultivation are the heaviest single item in the farmer's budget and far exceed those of artificial manuring. Let us consider some of the experiments which have been made on the matter of cultivation. With the cane-grower, deep cultivation has always been somewhat a religion. In the early thirties the Bundaberg Experiment Station set out to determine whether deep cultivation would increase crop production. After ploughing to twelve inches the land was subsoiled in every plough furrow to a total depth of 20 inches by means of a tractor-drawing single type subsoiler. Portions of the block were not subsoiled. A plant and two ratoon crops were grown and the total production for the three crops on the subsoil area was 63.3 tons per acre against 61.7 tons per acre for the non-subsoiled; the increase of 1.6 tons per acre was not significant and did not pay for the cost of the subsoiling of this particular soil type.

About the same time a different type of trial was laid down on the same Experiment Station. In this experiment it was hoped to demonstrate the relative values of normal scarifying practice as against no scarifying; in the latter treatment weeds were controlled by the hoe, but the soil was not disturbed by any implement. When the crop was eventually harvested it was found that the normally sacrificed area produced 36.5 tons per acre, while the area which had not seen an implement cut 37.6 tons per acre. This increase is again not significant, but proves that the saving in cultivation costs did not adversely affect the crop.

Slowly but surely investigators are drawing to the conclusion that crop yields are remarkably insensitive to variations in cultivation. The experiments quoted above are full scale trials and cannot be dismissed on grounds that they would not apply to practical field conditions.

Many experiments have been made at Rothamsted on the interrow cultivation of root crops, in which the minimum hoeings necessary to keep down the worst of the weeds have been compared with a greater number of hoeings. For a number of years the result of the extra hoeings was either no increase in the crop or, more often, a significant reduction in yield, a result due in all probability to the inevitable damage done on shallow feeding roots. In some later experiments an increased yield has been traced to one hoeing done in the early stages of the crop. It suggests that farm and garden crops are specially sensitive to weed competition in the early stages of their growth, and that one hoeing then is worth many afterwards.

R. T. Gibbens.

Red Rot in Windrowed Sugar Cane

I. L. Forbes, P. J. Mills and P. D. Dunckleman, in Sugar Bulletin, Volume 22 (1944) *No.* 18, *pp.* 148-149

When the fall planting season in Louisiana is abnormally wet and it is necessary to plant in the spring, use must be made of seed cane that has been overwintered in windrows. This is done by placing the cane stalks, with adhering leaves and tops, in the middles of the cane rows and covering them with two furrows of a turning plow. A number or varieties were windrowed in this manner and subsequently examined for the presence of red rot. In this respect the C. P. varieties 29/120, 33/310 and 29/103 are almost perfect windrowing canes for seed purposes; the varieties 29/116, 33/425, 29/320 and 36/105 are considered satisfactory; 33/243 and 34/120 are susceptible to red rot. The Co. varieties 290 and 281 definitely are not windrowing canes for seed purposes.

E. C. Simon.

Sugarcane Varieties of South Africa

The following table taken from an article by Dr. H. H. Dodds in the June 1944 issue of *The South African Sugar Journal* gives the percentage distribution of the crop by varieties during recent years.

Variety	Percent of total crop					
	1943-44	1942-43	1941-42	1940-41	1939-40	1938-39
Uba	6.50	11.1	16.6	23.2	30.2	32.2
Co. 281	64.40	52.4	42.4	37.5	28.3	21.0
Co. 290	11.28	19.1	26.5	28.2	30.0	35.0
Co. 301	14.06	10.6	5.9	3.3	2.4	0.3
P.O.J. 2725 and P.O.J. 2878	3.76	6.8	8.6	7.8	9.1	11.3

It is interesting to note that Co. 290 has been on the down grade. In this regard Dodds states: "It (Co. 290) proved very susceptible to red rot in certain areas and is not very adaptable to some of the exigencies that may arise in harvesting the crop."

Co. 281 now the dominant variety has remained free of mosaic with the exception of one infected stool recently discovered. Samples of the infected leaves were sent to Dr. Brandes in Washington who diagnosed the disease as a mild form of mosaic. Should this disease spread in Co. 281, South Africa may repeat Louisiana's experience with the variety.

R. T. Gibbens.

Hybrid Corn

With the growing extension of hybrid corn growing in Louisiana and the beginning of mechanical harvesting of this crop here the following data copied from *Crop Production,* 1935 edition by Hughes and Henson should prove interesting to some of the members.

"368. *Adaptation with Reference to Insect Pests.* The variety of corn best suited to a locality may be dependent upon other factors than maturity or ability to yield. The relation of shuck cover to insect infestation in the field in southern states has been reported by Kyle. The per cent of the ears infested with weevils was as follows: a poor shuck covering, 52; good shuck cover with worm holes, 38; a good shuck cover without worm holes, 9. The three groups of ear types infested with beetles was 96, 93, and 56 per cent, respectively. When the shucks extended 4 to 6 inches beyond the tip of the ear, the per cent of weevil infestation in the field was 9; 2 to 3 inches 22; no extension, 100 per cent weevil infested. After being in storage for 10 months, ears having poor shuck cover had 97 per cent infestation with weevil and 100 per cent with beetles; good shuck cover with worm holes, 55 per cent weevil infestation and 100 per cent beetle infestation; good shuck cover without worm holes, 4 per cent weevil infestation and 75 per cent beetle infestation.

Dungan and Burlison report that Mohawk, Blackhawk and Champion White Pearl grades as 100 per cent in yield and Reid Yellow Dent 75 per cent, as an average for an 8-year period on the Alhambra field in southern Illinois where there are frequent and serious infestations with the chinch bug; while at Urbana, where the infestation is not serious, Reid Yellow Dent ranked as 100 per cent in yield and Champion White Pearl as 90 per cent.

E. C. Simon.

Disposal of Government Surplus Property

A number of members of the American Sugar Cane League requested us to be on the lookout for the disposal of surplus government owned property which could be used by the Louisiana Sugar Industry. The following communication outlines the policy of disposing of all government owned surplus property through regular trade channels and not directly to consumers: (*Editor's note*)

"This will acknowledge receipt of your request to receive notification of availability of government owned property as it is declared surplus.

"We regret our inability to comply with your request as policy provides for sale of this property through regular trade channels and not directly to consumers. Notification of such sales would therefore prove of no value and eliminating such 'mailings' will effect great savings in time and manpower to our Government.

"We take the liberty of suggesting that you contact your dealer for the surplus merchandise you wish to purchase."

Office of Surplus Property.

Ration-Free Sugar

Following publication in *The Sugar Bulletin* of November 15 of"PROCEDURE FOR FARMER TO SECURE RATION-FREE SUGAR we have had a number of inquiries, whether the sugarcane grower could secure his sugar from a factory or producer other than the one to which he delivered his sugarcane, and also inquiries were directed at the price to be charged for the sugar.

For your information and guidance I am reproducing the following telegrams which I think clear the situation: (*Editor's note*)

New Orleans, Louisiana
December 7, 1944

C. J. Bourg
510 Union Trust Building
Washington 5, D. C.

UNDER OPA REVISED RO3 MUST PRODUCER OF SUGARCANE SECURE HIS SUGAR FROM THE FACTORY WHERE HE DELIVERS HIS SUGARCANE ONLY? WHAT PRICE CAN THE FACTORY CHARGE FOR THE SUGAR? PLEASE TRY TO GET THE ANSWERS FROM OPA AND WIRE ME TODAY. Marcel J. Voorhies.

Washington, D. C.
December 7, 1944

M. J. Voorhies
414 Whitney Building
New Orleans 12, Louisiana

RETEL GROWER MUST SECURE SUGAR FROM FACTORY TO WHICH HE DELIVERS SUGARCANE. PRICE ESTABLISHED RPS 60 AMENDMENT 13 WHICH IS CEILING FOR TYPE OF SUGAR PRODUCED LESS FEDERAL TAX. C. J. Bourg.

Application for the ration-free sugar must be made on Form 2 (Sugar) of the Treasury Department. The factories will supply the growers with the necessary copies of this form upon request.

Planning Production of the Louisiana Sugarcane Crop

With the end of the harvesting season rapidly approaching attention is being directed to the production of the 1945 Louisiana sugarcane crop. This is the time of the year when the 1945 production activities should be planned in advance and the "must work" listed so that proper advantage may be taken of favorable working weather. To this end we are reproducing below the counsel and recommendations of the Experiment Stations (State and Federal) published in Extension Circular 151:

"Drainage:

The first essential factor for successful sugarcane cultivation under South Louisiana conditions is good drainage. This must be constantly kept in mind.

The drainage system should never suffer from neglect."

"Cultivation—Early Work

When we begin to cultivate our crops, the first operation consists in wrapping the middles. This can be done at the will of the planter. It should be done deeply and thoroughly because we are rapidly approaching the time when no more plowing should be allowed. But the off-bar furrow should not be run until the cane has clearly shown that it is approaching the stage when we can expect it to come up to a stand. This is particularly true in the case of stubble canes. It is true because in running the off-bar furrow the greater portion of the old root system is pruned. Experiments have shown conclusively that this old root system functions in feeding the young cane until it has established its own root system, and for that reason, as much of it as is possible should be left intact as late in the season as is practicable. In many instances, even before wrapping the middles of stubble, it is well to sink the old middles deeply. After a wet harvest when the wagon wheels have driven quantities of cane flags into the ground, this is a particularly good practice because the plow brings those old tops into contact with air and hastens their decomposition. The use of the plant cane scraper or the stubble shaver is optional. These are two implements capable of doing good work and of saving much money when properly used. Neither of them should be used as a habit. On the other hand, they should be employed judiciously and intelligently. If the plant cane scraper is used after much of the cane has come up, the scraper will undoubtedly break many of the young canes back to the mother stalk. And while germination will come again from such broken canes, it will be delayed and often is delayed until after so much soil has been brought back to the drill that these weaklings never see day-light. The stubble shaver should never be used until after a thorough examination to determine the condition of the eyes on the root stock. If examination shows the eyes on the lower end of the root stock to be good, then there is no danger of losing a stand by shaving stubble. On the other hand, if the winter has been such as to cause the lower end of the root stock to die, shaving of the upper eyes may destroy from 1/3 to 1/2 of the good eyes remaining, and may result in gappy stands.

The sled type shaver is not well suited to the new varieties of cane which we are now growing. It tends to split the stubbles and even pull them out of the ground. The opposing disc and the newly developed single disc, when kept in good mechanical condition, and particularly when power driven, make a clean cut with but little damage. In using a mechanical scraper on plant cane, this operation has to be planned for by covering the seed cane to a depth of four inches. Where seed cane is covered only two inches, it would hardly be possible to run the scraper without doing serious damage to the seed cane. After running the mechanical scraper, all fields should be examined to see that no portion of them has been left with the cane too deeply covered. In fact, it is a good practice to run a hoe gang behind a scraper to cover exposed seed cane as well as remove extra soil where the seed cane has been left covered to too great a depth. *Not more than two inches of soil should be left after this operation.* Much of the unsatisfactory stands, in the case of C.P. 28-19, C.P. 29-320 and Co. 281, and other varieties are due to improper removal of excess soil in the early spring."

"Stubble Digger

The stubble digger is a tool which can be dispensed with especially in the case of very favorable weather conditions. When used it should be run early in the season to spade the soil around the stubble before germination has developed to any considerable extent. If this tool is run over cane which is germinating freely, it will break many of the young sprouts; whereas, if it is run early, it will save much hand work and insure earlier germination of the stubble crop. The matter of following the stubble digger with a hoe gang is purely optional. In the case of a late spring it is usually a very profitable procedure."

"Fertilizers

On the average, following heavy crops of summer legumes turned under, no fertilizer has been found necessary for maximum yields of plant cane where good soil management practices are followed. First and second year stubble crops give paying yield responses from applications up to 36# of nitrogen per acre.

Our source of nitrogen tests carried out for many years show that sugar cane, due to its long growing season, is able to utilize successfully several different sources of nitrogen giving comparatively the same returns per pound of nitrogen applied. Our recommendation in the past has been for growers to purchase that form of nitrogenous fertilizer which could be purchased at the cheapest cost per pound of nitrogen. Due to competitive costs, calcium cyanamid and sulphate of ammonia were extensively used. In our work, nitrate of soda, cal nitro, sulphate of ammonia, calcium nitrate, urea and calcium cyanamid have given comparative yields when an equal number of pounds of nitrogen of each source was used.

With the scarcity of nitrogenous materials due to the war, we recommend the purchase of those sources of nitrogen which are available in sufficient quantity to fill nitrogen needs. Either of the several sources of nitrogen listed above may be used.

Work in the western section of the sugar district (parishes of St. Mary, Iberia, Vermilion, Lafayette, and St. Landry), shows that on some soil types the fertilizing elements, phosphorus and potash, seem necessary for maximum yields of sugarcane. In this area on the older soil types which have become acid due to weathering, nitrogenous fertilizers which leave an acid residue in the soil are not desirable. The county agent in each of the parishes of the western section should be consulted by the growers of that parish for specific fertilizer recommendations."

Sugarcane Diseases

Department of Plant Pathology, L.S.U.

There are four important diseases of sugarcane, mosaic, red rot, root rot, and chlorotic streak.

Red Rot and Root Rot. Losses from these diseases can be reduced by planting the varieties that show some resistance. Varieties which are suspectible, such as C.P. 33-243 should only be planted under conditions recommended by the Experiment Station. Losses can also be decreased by improving the drainage of the fields.

Mosaic. Two of the commercial varieties of sugarcane, Co. 281 and Co. 290, are highly suspectible to mosaic. Since no satisfactory substitutes have been produced to replace these varieties in certain areas of the State, it is necessary to control mosaic if satisfactory crops are to be grown. Roguing of seed plots

is generally practiced in the principal Co. 290 areas of the sugarcane belt and consequently mosaic has been practically cleaned up in these areas. As a result, crop production has been increased in the neighborhood of 20 per cent. However there are still many areas where little attention has been paid to the mosaic problem in Co. 290. If this problem is given serious consideration by County Agents, the disease should be brought under control. The control of mosaic in Co. 281, while more difficult, can be accomplished if seed plots, planted with relatively mosaic-free seed and rogued systematically, are used. The all important thing in the control of mosaic by roguing in these two suspectible varieties are: (1) Begin with seed cane that has less than 5% of the stalks mosaic diseased. (2) Systematic roguing, beginning in May, or as soon as the mosaic can be definitely detected in the young plants, and continuing regularly throughout the summer months at about ten-day intervals. The seed pieces from which mosaic plants have developed should be dug out. Of course, seed plots should be well isolated, one-half mile if possible, from mosaic-diseased cane of any variety.

Chlorotic Streak. There are two methods of controlling this disease in seed plots: (1) Using water treated seed stock, and (2) using rogued seed.

The hot water treatment (52° C. for 20 minutes) eliminates the disease from cane stalks and it is the recommendation of the Experiment Station that this method be used in establishing seed plots of susceptible varieties like C.P. 29-320 and others in which the disease is present. Where facilities are not available for "dipping" the seed cane, chlorotic-streak free cane should be selected for planting seed plots. Chlorotic streak has been controlled in seed plots by roguing on several properties. Knowing the potential damage that chlorotic streak can do in susceptible varieties, every effort should be made to secure only disease-free seed cane for planting purposes.

The following information on the control of mosaic and chlorotic streak has been taken from published articles by the pathologists of the United States Department of Agriculture.

[1]One of the most important points and, incidentally, one of the hardest to impress upon sugarcane farmers, is the value of planting mosaic-free seed regardless of the secondary spread into the planted cane. Most growers feel that of mosaic spreads into their fields they have lost all the effort expended in securing healthy seed. Such is not true, however, because from the standpoint of sugar produced, the important thing is to start with healthy seed. The advantage of better stands and increased vigor secured from planting mosaic-free seed carry over into 1st and 2nd stubble crops, even though secondary spread may bring the percentage of mosaic up to 50 or 75 in the plant cane crop. It is important, therefore, if either of these varieties, Co. 281 or Co. 290, is to be planted, to expend every effort to secure mosaic-free planting material.

A second point that should be emphasized is the necessity for starting to rogue as early as possible in the spring. The best success will be secured if plant cane is used.

Heavy fertilization of seed plots is a desirable practice.

[2]Chlorotic streak can be more easily controlled by roguing seed plots of the present commercial varieties than can mosaic. It is important that fields with not more than 5% infection be selected for roguing, and that the first roguing be made not later than May. At least one more, and preferably two more roguings should be made in June. Roguing during the summer when the cane is tall is more difficult and expensive, and if a good job has been done in May and June, probably should not be necessary. A final survey of the rogued plots before planting time in the fall is desirable, at which time an additional roguing may be made if diseased plants are found.

C.P.'s 28-19, 29-103, 29-120, 29-320, and 34-120 are susceptible to chlorotic streak, and inspection of fields of these varieties to be used for seed is recommended in areas where chlorotic streak is known to occur, in order to determine whether roguing is desirable.

Recommendations for a Sugarcane Borer Control Program in Louisiana

A. L. Dugas

A number of very definite recommendations for the control of sugarcane borer have resulted from many years of extensive observations and experimental research. All of these recommendations fit into a borer control program, which appears essential for the successful control of the borer.

The following recommendations are considered in the order in which they should be applied during the year and are grouped according to the purpose which they accomplish:

Recommendations

To Destroy Overwintering Borers.

1. Burn trash, cane pieces, tops, grasses, etc., thoroughly.

Cane trash left in the fields during harvest is by far the most important source of borer infestation the following spring. A special effort should be made to burn all trash and clean up the fields as thoroughly as possible.

2. Shave summer planted cane and burn shaved-off plants.

After the plants have been killed-down by cold, they should be shaved-off, preferably in late February, and the shaved-off plants burned.

To Control First Generation Borers.

3. Dust cane with cryolite.

First generation dusting is recommended for treatment of an entire plantation; for heavily infested areas from which there may be a substantial spread of borers into adjoining areas; and for smaller areas with a localized infestation.

Dust four times at weekly intervals, beginning with the first emergence of young borers. Apply dust at rate of about 8 pounds per acre per application with a power machine, and 10 pounds with a hand gun, while the air is quiet and dew is on the plants, which is usually between 6 p. m. and 9 a. m.

4. Cut out or rogue dead hearts.

The roguing of dead hearts is recommended for areas with a light infestation, and as a follow-up of dusting to destroy any borer which may have survived the dusting treatment.

5. Cut out and destroy heavily infested early corn.

Heavily infested early corn should be cut and fed to livestock or otherwise destroyed before there is a movement of moths into adjoining cane.

To Control Second Generation Borers

6. Release Trichogramma.

Releases should not be made with the idea of replacing dusting, but to maintain the parasite population at the highest possible population and thereby increase its usefulness in supporting all other control practices.

7. Dust cane with cryolite.

Dusting for second generation is recommended for smaller areas, such as seed plots or only a part or parts of infested areas, where there is danger of re-infestation from adjacent untreated cane.

Four applications at weekly intervals, beginning with the first emergence of borers, are necessary. Apply cryolite at the rate of about 10 pounds per acre per application.

To Insure Good Stands and Healthy Plant Cane.

8. Plant borer-free cane.

Select seed cane as lightly infested as possible, and protect seed plots from borer injury.

To Decrease Number of Borers Entering Hibernation

9. Cut cane at ground level.

In harvesting, canes should be cut at ground level or just below the ground level to reduce the number of borers overwintering in cane stubble. This also serves to increase sugar production.

10. Make thorough clean-up during harvest.

It is far better to harvest clean than to rely upon burning after harvest to destroy material in which borers may be overwintering.

A man and a cart following the cane loader may pick-up enough millable cane and pieces to more than pay for the operation, in addition to decreasing the number of borers entering hibernation.

[1] Summers, Eaton M.
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Sugar Bulletin, Vol. II, No. 23, Sept. 1, 1933, pp. 8-9.

[1] Summers, Eaton M. and Rands, R. D.
Losses due to planting of mosaic seed cane.
Sugar Bulletin 13, No. 15, May 1, 1935, pp. 2-6.

[2] Abbott, Dr. E. V.
Sugar Bulletin 18 (14): 60-61, 1941.
Sugar Bulletin 18 (19): 3-6, 1940
Sugar Bulletin 20 (18): 161-165, 1942

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THE SUGAR BULLETIN

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Sugar Allotment Reduced

(Official Release)

Formal action providing reduced allotments to most industrial users of sugar beginning with the first quarter of 1945 was announced on December 15th by the Office of Price Administration.

The reductions, effective January 1, 1945, will affect most industrial users of sugar. Sugar allotments to producers of bread, bakery and cereal products, however, will continue unchanged at 80 per cent of their 1941 use, and allotments to makers of pharmaceuticals will continue unchanged at 125 per cent of their 1941 use.

For all classes of industrial users, with one exception, allotments of sugar are reduced from 80 to 70 per cent of their 1941 use.

The reduction, OPA said, is in line with first quarter allocations of sugar for civilian use as made by the War Food Administration. U. S. sugar inventories it was pointed out by WFA, are at a low level, with stocks on January 1 expected to be about 450,000 tons below those of a year earlier, and military demands on merchant shipping during early 1945 are uncertain.

The exception is in allotments for producers of jams, jellies, preserves, marmalade and fruit butter, which will be 70 per cent of their 1944 use. These industrial users will no longer be granted "provisional allowances" of sugar; that is, allowances limited only by the number of units produced. Their 1945 allotments will be based on their use of sugar to make these items for civilian use during the corresponding quarters of 1944.

Fruit packers will continue to receive provisional allowances during the packing seasons beginning after December 31 so that their production will not be reduced, but their average use of sugar for each case of fruit packed is reduced from 100 per cent to 90 per cent of the quantity used during 1941. These allowances, as in the past, will be on the basis of the average amount of sugar used in 1941 per unit of all grades packed, expressed in numbers of cases containing 24 cans of the No. 2-1/2 size.

Industrial users may apply for their allotments at the local War Price and Rationing Boards or District Offices where they are registered, beginning December 16, 1944.

Allotments of sugar to bakers and other producers of cereal products are being maintained at present levels at the request of the War Food Administration. WFA has advised OPA that maintenance in 1945 of the present level of cereal product production is essential to the accomplishment of the national food program. WFA states that the nutritional basis for this level of allotment for cereal products is well established.

Similarly, allotments for pharmaceuticals are being continued unchanged at 125 per cent of base period use, in order to meet the continued heavy demand for these health-sustaining products.

Since jams, jellies, preserves, marmalades and fruit butters were in ample supply, they were removed from rationing September 17. There is no need at this time of allowing an unlimited amount of scarce sugar for their production, OPA said.

When applying for an allotment for the first quarter of 1945, each industrial user producing jams, jellies, preserves, marmalades and fruit butter must file a statement (OPA Form R-315) with the OPA board or district office with which his industrial user estab-

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MARCEL J. VOORHIES, Editor

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lishment is registered. This statement must show the amount of sugar used at his establishment in each quarter of 1944 for producing such products. He is not to include any amount of sugar used in these products that he delivered to certain designated agencies, such as the Army and Navy, authorized to replace the sugar.

However, an industrial user producing these products may apply for his sugar allotment between December 15 and January 5, giving information regarding the amount used for the first three quarters of 1944, and he will be issued 50 per cent of his allotment. The remainder of the allotment and allotments for subsequent periods, will be issued only after he furnishes OPA with the required information covering his use in the fourth quarter of 1944, and has accounted for the sugar which he obtained during 1944 to make these products.

If he applies after January 5, he will still be required to furnish this information. However, in that event the allotment he receives will be reduced in proportion to the part of the allotment period which has expired on the day he applies.

(Amendment No. 2 to Second Revised Ration Order 3—Sugar—effective December 16, 1944.)

United States Sugar Situation

The following tables are taken from the report of the Food Industry War Committee on "The Sugar Situation."

Stocks, Indicated New-crop Production and Probable Distribution for the Statistical Year—Commencing October 1, 1944, Ending December 30, 1945

TABLE I

ESTIMATED REQUIREMENTS FOR DISTRIBUTION AND STOCK REPLENISHMENT IN CONTINENTAL UNITED STATES
OCTOBER 1, 1944 TO SEPTEMBER 30, 1945

	Footnotes	Short Tons Raw Value
Civilian household use (on ration coupons)	(a)	1,675,000
Civilian home canning	(b)	710,000
Institutions, Restaurants, etc.		480,000
Industrial—For civilian consumption	(c)	2,500,000
Armed Forces—direct use		580,000
Armed Forces—indirect, and other replaceable and provisional		550,000
Lend-lease and other Government exports		480,000
Replenishment of trade inventories (invisibles)		175,000
Population shifts, hardship allowances, rationing leaks, unexpired coupons and certificatess from preceding period, and unaccountable statistical losses		240,000
Total delivery requirements		7,390,000
Replenishment of Refiners' raw and refined stocks	(d)	210,000
Grand Total Delivery and Replenishment Requirements		7,600,000

Footnotes to Table 1:

(a) This is on the basis of approximately 25 pounds of refined sugar per capita for the estimated civilian population.

(b) During the calendar year 1944 it is variously estimated that from 900,000 to 1,100,000 tons of sugar found its way into household consumption on canning ration coupons. We are using here approximately the quantity of sugar which we understand the War Food Administration has allocated for this purpose.

(c) Industrial allocations for the manufacture of products for civilian use is computed on the present basis of 80% of 1941 "use", plus the special allowances to certain industries.

(d) At October 1, 1944, seaboard cane refiners' stocks of raw and refined were only 373,000 tons, an extremely low level, if an even distribution is to be maintained during the late summer and early fall months. The addition of this item is calculated to bring refiners' stocks up to 583,000 tons at September 30, 1945. It should be noted that this item is not included in actual distribuion requirements. It merely has the effect of transferring stock from offshore areas to continental United States.

PROSPECTIVE SUPPLIES

To provide the U. S. Continental requirements of 7,600,000 short tons scheduled in Table 1, we have the following indicated supplies to draw from:

TABLE II

INDICATED SOURCES OF SUPPLIES

		Short tons Raw value
Visible Stocks in Continental U. S. on October 1, 1944:		
Refiners' raws	288,000	
Refiners' refined	85,000	
Beet Processors' stocks of refined	84,000	
Mainland cane stocks	2,000	
Importers' stocks	6,000	
Total in Continental U. S.		465,000
Visible Stocks in Offshore Areas on October 1, 1944:		
Cuba	2,050,000	
Puerto Rico	209,000	
Hawaii	50,000	
Total in Offshore Areas		2,309,000
Prospective New-crop Supplies Available from October 1, 1944 to September 30, 1945:		
Domestic beets	1,100,000	
Domestic cane	480,000	
Cuba (Less local consumption)	4,800,000	
Puerto Rico (Less local consumption)	850,000	
Hawaii (Less local consumption)	800,000	
Other miscellaneous offshore sources	50,000	
Total Prospective New-crop Supplies		8,080,000
Grand Total—Initial Stocks and New Crop Supplies		10,854,000

TABLE III

PROBABLE CONTRIBUTION OF EACH SOURCE OF SUPPLY TO THE CONTINENTAL REQUIREMENTS OF 7,600,000 TONS

		Short tons Raw value
Domestic beets—(direct-consumption sugars)		1,084,000
Mainland cane—(direct-consumption sugars)		80,000(a)
Importers of direct-cons. sugars (Cuba 300,000; Puerto Rico 100,000)		400,000
Cane refiners:		
From Continental cane raws	400,000	
From Hawaiian raws	800,000	
From Puerto Rican raws	750,000	
From Cuban raws	4,036,000	
From Miscellaneous offshore raws	50,000	
TOTAL		6,036,000
GRAND TOTAL		7,600,000

(a) It is possible that deliveries of direct consumption sugars by mainland cane mills may exceed somewhat the figures shown.

Note: Table III emphasizes two extremely important points if the proposed program of distribution is to be carried out, viz:

(1) that seaboard refiners melt must be maintained at a very high level approximately 500,000 tons per month, or almost 6,000,000 tons per year. In view of the fact that refiners' receipts and melt during the first 3 months of our statistical period (i. e. October-December 1944) will fall considerably short of the required monthly average, the melt must be correspondingly stepped up during the first nine months of 1945.

(2) that the proposed program calls for offshore imports of 6,036,000 tons, viz.: Cuban raws and refined 4,336,000; Miscellaneous offshore supplies 50,000; Hawaiian raws 800,000; Puerto Rican raws and refined 850,000. In view of the fact that imports of offshore raw and refined from October 1st to December 31, 1944 will probably not exceed 1,100,000, the import requirements for the first 9 months of 1945 will be 4,936,000 tons. This will require an average monthly import movement of approximately 550,000 tons from offshore areas for the period January 1, 1945-September 30, 1945. Since distribution reaches its peak in July, August and September, the imports during the first 5 or 6 months should be at a higher rate to offset the normal refining lag between arrival of raw sugar and its distribution to the consumer.

TABLE IV

STOCK POSITION ON SEPTEMBER 30, 1945

If the sources of supply are drawn upon as scheduled in Table III, then the indicated stock position on September 30, 1945, will be as follows:

		Short tons Raw value
In Continental United States:		
Domestic Beet processors	100,000	
Mainland Cane	2,000	
Importers	6,000	
Cane Refiners'—Raw and Refined	583,000	
Total in Continental U. S.		691,000
In Offshore Areas:		
Hawaii	50,000	
Puerto Rico	209,000	
Total		259,000
Cuba:		
After deducting U. S. shipments scheduled in Table III	2,514,000	
Deduct further estimated shipments to U. K., Canada, U.N.R.R.A., etc. during period	750,000	1,764,000
Grand Total—Indicated Stocks in U. S. and offshore areas on September 30, 1945 which stocks must provide part of the consumptive requirements of U. S., exports to other countries, and working stocks in the various areas until new crop production becomes available in 1946.		2,714,000

Note: We do not presume to say the U. K., Canada,. U.N.R.R.A etc., should get 750,000 tons (more or less) of direct shipments from Cuba during the period October 1, 1944-September 30, 1945. The amount appears reasonable based upon past experience. This amount is inserted primarily to call attention to the fact that, in addition to the U. S. requirements from Cuba during this period, provision must at the same time be made for Cuban shipments to other destinations. Cuba's stocks at September 30, 1945 will, therefore, be subject to revision up or down depending upon the amount actually shipped to destinations other than the United States.

These remarks should be kept in mind when considering the stocks at January 1, 1946, as projected forward in Table V that follows.

TABLE V

U. S. SUGAR SITUATION PROJECTED FORWARD FROM SEPTEMBER 30, 1945 TO JANUARY 1, 1946

	Short tons Raw value
Stocks in U. S. on September 30, 1945	691,000
Probable New-crop Production October-December 1945:	
Domestic beets	1,350,000
Domestic cane	450,000
Probable offshore imports October-December 1945:	
From Hawaii	176,000
From Puerto Rico	130,000
From Cuba	669,000
From Miscellaneous	25,000
Estimated Total Available	3,491,000
Less Estimated Distribution October-December 1945	1,750,000
Indicated Stocks in U. S. on January 1, 1946	1,741,000

If the imports from offshore areas approximate those above, the stock position in the offshore producing areas on January 1, 1946, would then be as follows:

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			Short tons Raw value
In Hawaii:			
Stocks October 1, 1945		50,000	
October-December 1945 production		165,000	
		215,000	
Less: Exports to U. S.	176,000		
Local consumption	20,000	196,000	
Stocks January 1, 1946			19,000
In Puerto Rico:			
Stocks October 1, 1945		209,000	
Less: Exports	130,000		
Local consumption	25,000	155,000	
Stocks January 1, 1946			54,000
In Cuba:			
Stocks October 1, 1945		1,764,000	
Less: Exports to U. S.	669,000		
Local consumption	40,000		
Exports elsewhere	250,000	959,000	
Stocks January 1, 1946			805,000
Indicated Stocks in offshore areas on January 1, 1946			878,000

Trashy Sugarcane

We print below two letters by Mr. G. J. Durbin, Administrative Officer in Charge, AAA, Baton Rouge, La., relative to trash in sugarcane. These letters are self-explanatory.

1944 Sugar Mill Letter No. 6
UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Adjustment Agency
University Station
Baton Rouge, Louisiana
December 19, 1944

To: *Louisiana Sugar Mills*
Subject: *Trashy Sugarcane*

A recent survey of conditions in the sugar belt has disclosed the fact that in their eagerness to finish the crop many growers are making no attempt to burn or otherwise clean sugarcane delivered to mills. While it is appreciated that under the weather conditions that existed at the end of November and the early part of this month, that is, continued rains with consequently heavy fields, it has been impossible in all instances to deliver trash-free cane, apparently some growers are not even attempting to do so. Also, under present conditions of harvesting with mechanical harvesters and loaders, a large number of green tops, dry trash and mud is being delivered along with the cane. Therefore, the grinding rates of mills have been considerably reduced and yields have been unusually low. It is felt that in the event recent freezes are followed by warm weather, deterioration of the cane will be such as to add to present difficulties and, unless an effort is made by both processors and growers to reduce the amount of extraneous matter delivered to the mills, a large amount of tonnage will be left in the field and thus cause further losses which may be avoided.

You are requested, therefore, to use your influence wherever possible to have your growers deliver cane which has been reasonably cleaned or burned. This may be done by persuasion or by your making a reasonable and equitable deduction for all trash delivered in excess of normal amount.

As you realize the 1944 crop has been somewhat disappointing and the yield of sugar at the mills is considerably less than normal. This, in our opinion, is due in part to the late maturing of the sugarcane crop on account of September rains and in part to the excess weight of trash on cane from which no production is obtained and from which considerable loss may occur. This not only may increase the amount paid for cane by the mills, but also may cause excessive sugarcane benefit payments or incentive payments to be made on sugarcane which has not been properly cleaned.

Please give us your cooperation in doing your utmost to minimize the ill effects of a condition which though hard to eliminate may to a large extent be improved upon.

(Signed) *G. J. Durbin,*
Administrative Officer in Charge.

1944 Sugar Letter No. 11
UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Adjustment Agency
University Station
Baton Rouge, Louisiana
December 19, 1944

To: *Parish Administrative Officers in Sugarcane Parishes*
Subject: *Harvesting Operations and Trashy Cane*

The recent cold weather which followed recent rains has brought about a condition where it becomes necessary for mills to grind cane as near their rated capacity as possible in order that the remaining standing cane can be saved. When sugar factories are required to slow down their rate of grinding because of frozen cane or excess trash, this condition acts against the growers so that they are not able to maintain their harvesting schedule.

A recent survey indicates that in spite of adverse weather conditions and the heavy condition of fields due to recent rains, the majority of producers are making determined efforts to deliver cane that has either been burned or otherwise cleaned; however, in a number of instances growers are taking advantage of the present situtaion caused in part by labor shortage and are making no attempt to either clean or burn cane. Also under the present system of mechanical harvesting and loading, a number of green tops and cane which has not been properly topped is delivered to the mill along with trashy cane, and, under these circumstances, mills are unable to maintain their normal grinding rates.

The Louisiana Sugarcane Purchase Contract states in paragraph 6 that "All cane must be reasonably free from shucks or trash and must be sound, unfrozen and merchantable and cut to the reasonable satisfaction of the processor. The cane must be cut at the top ripe joint unless and until there is a freeze, after which knives shall be lowered so as to remove all sour or acid joints." Of course, it is realized that under present conditions it may not be possible to fully carry out the provisions of this contract, and by mutual agreement with processors the grower has been permitted to deliver sugarcane that has not been thoroughly cleaned and weight deductions made thereon in some cases.

However, with the present shortage of sugar and the need for maximum production in Louisiana, it should be the patriotic duty of every grower to reduce as much as possible all extraneous matter delivered to the mills, matter which is not sugarcane and from which no sugar can be produced; also, it should be the duty of the processor to insist that his growers exert every effort to deliver him trash-free or burned cane that has been properly topped and, if the grower does not do so, a reasonable deduction, equitably made, should be taken from the actual cane weight delivered at the scale in

order that the net weight delivered agree more nearly with actual sugarcane weights.

He should be made fully aware that he is not only receiving payment from the mill which may not actually represent the true value of the cane, but also may be receiving conditional payments or incentive payments in excess of that to which he is normally entitled.

You are, therefore, requested to notify each of your growers to exert every possible effort to save the balance of his crop and by properly cleaning his own cane, aid his neighbor, and the sugar mill to which he delivers his cane, to also save their crops.

(Signed) *G. J. Durbin,*
Administrative Officer in Charge.

Recommendations for Sugarcane Insect Control

The following recommendations have been made by the Houma Laboratory of the U. S. Bureau of Entomology and Plant Quarantine for sugarcane insect control in Louisiana:

At all times of the year there are measures which can be followed which are of material value in controlling the sugarcane borer. These are as follows:

Harvest Time.

(1). Make a more thorough clean-up of pieces of millable cane during harvesting operations to eliminate the overwintering of borers in these large pieces.

(2). Cut lower when harvesting cane to decrease the number of borers overwintering in cane stubs and to increase sucrose production.

Winter.

(1). After harvesting, thoroughly burn the trash as soon as it is dry, to destroy overwintering of borers.

(2). During the winter cut and burn all large grasses in which borers might hibernate in and around fields.

Growing Season.

(1). Rogue out dead hearts caused by first-generation borers where labor is available. To be effective roguing should be done three times at 8 to 10-day intervals.

(2). Dust with cryolite in accordance with recommendations drawn up jointly by the U. S. Bureau of Entomology and Plant Quarantine and the Louisiana Agricultural Experiment Station and published in the March 1, 1943 issue of *The Sugar Bulletin.*

Planting Time.

(1). Select seed cane as free from borers as possible to secure a better stand and to decrease the number of borers overwintering in planted canes.

(2). Where agronomically practical, refrain from planting the susceptible variety C.P. 29-103 in areas of heavy borer injury.

A number of sugarcane pests now occur only in a limited portion of the Gulf Coast sugarcane area, and are likely to be transferred to uninfested sections through indiscriminate transportation of sugarcane. There is a great danger of the unintentional transportation of these pests. No cane should be moved from one section to another without first consulting responsible Federal or State agencies. In most cases it will be necessary, before moving cane to a new territory, to treat it to destroy any pests likely to be carried on or in it. Also, the presence of any new destructive pest found attacking sugarcane should be reported immediately to Federal or State agencies.

Crop Insurance

By C. J. Bourg

An experiment of wide possibilities was authorized by an Act of Congress just prior to adjournment, to provide Federal insurance against crop failure. In view of conflicting theories about the best method to use in covering crops by insurance, it was decided to make tests in various parts of the country and on different crops.

Some years ago a rather ambitious program offered insurance protection to wheat growers but the results were costly and unsatisfactory. Because of that experience, there has been great hesitancy within Congress to have the United States Government engage in crop insurance.

It was wisely decided to inquire thoroughly into the several programs proposed and consequently the plan was adopted by which experiments will be made under the supervision of the U. S. Department of Agriculture. Twenty counties will be selected for making tests in the case of each crop and insurance coverage will be provided. The experience in each crop and in each county will serve as a practical basis for determining to what extent Congress should provide a program of broad coverage in agriculture.

The Act of Congress is of general application to farm crops although certain basic crops are specified. Among crops named are "sugar beets and sugarcane". In view of the freeze hazard with respect to sugarcane, the possibilities of effective protection would be a source of encouragement and stability should it be finally decided to have the U. S. Government underwrite the success of needed crops.

Details must be worked out both as to the experiments and as to the general program. The idea would be to establish premium rates payable to farmers on the basis of the crop risk involved. This is a very good start, however, carefully the approach is being made, which should eventually be of great benefit to farmers in planning their farming operations. Likewise, it should stabilize the efforts of the Government in its production programs.

Thomson Machinery Co. Licensed Sizz-Weeder Manufacturer

The saving of the $32,000,000 Louisiana cane crop this year, accomplished by utilizing about 356 mechanical harvesters to do the work of over 21,000 workers not available, has created an intense interest not only in mechanical harvesting but also in mechanical cultivation—the next logical step.

Flame cultivation has been tested in the sugar cane fields of Louisiana and has been found practical and economical in the raising of sugar cane. Unwanted weeds and grasses are killed back but the tougher sugar cane is basically unharmed. Tests were conducted by the Louisiana State University in 1942 and a considerable number of commercial machines sold and used extensively in the 1944 sugar cane season. Such concerns as Milliken & Farwell, Inc., New Orleans, La.; Billeaud Sugars, Broussard, La.; A. Wilbert's Sons L. & S. Company, Plaquemine, La.; South Coast Corporation, Houma, La.; C. J. Savoie, Belle Rose, La.; F. A. Graugnard, St. James, La.; Remy P. Robert & Bros., Burnside, La., purchased and used the machine throughout the 1944 season.

The demand for the type of machine now avail-

able, and the limited number which can be built for 1945, has created a situation which is unfortunate —so many want units and so few can be built under War Production Board authorities.

The Sugar Bulletin has been advised that the patents for the Sizz-Weeder, the original flame cultivator for the control and elimination of weeds, are controlled by the Fijelen Research and Development Company of 2500 Calvert Street, Washington, D. C.

They have granted the license to construct machines to the Thomson Machinery Company, Labadieville, Louisiana, embracing all the technical improvements gained from extensive 1944 field use. The War Production Board has extended priorities to the Thomson Company to manufacture only a limited number of units.

We are also advised that some planters, who saw the Sizz-Weeder in operation and were unable to receive assurance that they could purchase a machine for delivery early in 1945, have been able to obtain materials for building a home-made, improvised unit for their own use, by direct request from their local War Production Board office. It is called to our attention by the Fijelen Research and Development Company, that these planters have probably failed to realize that flame cultivation is a patented process and that a license must be procured by the individual builder from the Fijelen Company, the same as a quantity manufacturer.

To meet the war time situation, the Fijelen Company has recently issued information telling how a license can be secured either through the Thomson Machinery Company at Labadieville, or directly from it. (*See ad on page* 55.)

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Shop Early!

By C. J. Bourg

As this is the New Year issue of *The Sugar Bulletin*, it is appropriate to remind our members that their orders should be placed without delay for materials, equipment and supplies needed in connection with the 1945 crop. For example, the needs for fertilizer have been provided by means of Government action each year. The basis is necessarily the known requirements of the farmers as shown by the orders submitted. Deliveries of fertilizer in April and May are always congested, with demands from all parts of the country. In a sense, we are advocating the same principle which has been urged by stores in recent months: "Do your Christmas shopping early."

The same situation exists with respect to farm machinery and even the repair and maintenance supplies needed for the sugarhouses. It may seem much too early for any one to think seriously about the needs of next summer or of the next harvest. Any one who entertains that feeling should be reminded of past experiences and of the fact that obtaining materials with which to build mechanical equipment and machinery during war-time is a long drawn-out process under Government restrictions. By making known your needs, through orders actually placed with suppliers, you are making it possible for these suppliers and the manufacturers to obtain realistic information for their purposes and for the justification of demands upon the Government.

Experience has shown that the Government moves slowly in most things and it is very difficult to get results if you wait until an emergency has presented itself. To whatever extent it may be possible to take an early inventory of your requirements, you will be cooperating with the American Sugar Cane League, and you will be making a real contribution to the war effort when you file your orders promptly even for a deferred future delivery.

A Prosperous New Year to all, with Peace before the next Harvest!

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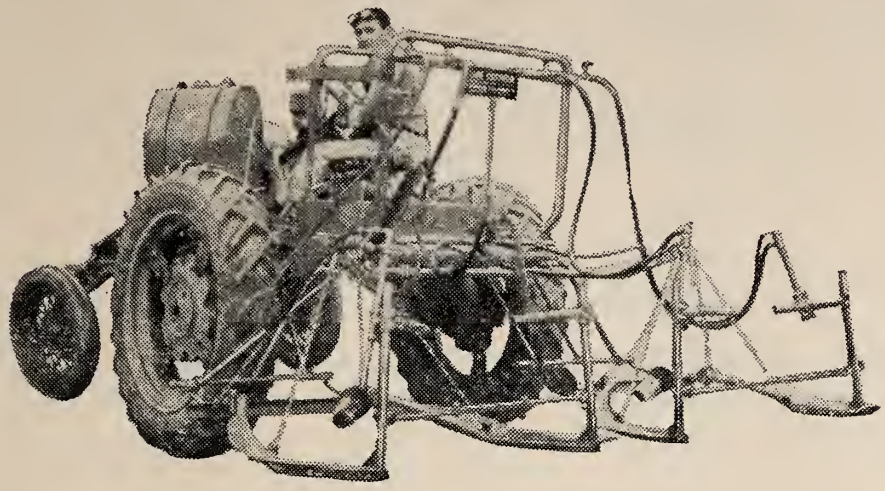

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Address requests to our licensed representative in your area—The Thomson Machinery Company, Labadieville, Louisiana.

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Vol. 23 NEW ORLEANS, LA., JANUARY 15, 1945 No. 8

Summary of Tests with Selected Fertilizer Treatment on Sugarcane on Major Soil Types in Louisiana

By Lester G. Davidson, Associate Chemist, and Lewis A. Hurst[1] Biochemist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Research Administration, United States Department of Agriculture.

Fertilizer investigations with sugarcane have been conducted for several years on major soil types in the sugarcane section of Louisiana. Experiments have been conducted on plantations throughout the sugarcane area with excellent cooperation by the owners, managers, and overseers on the various plantations. The experimental fields were located on uniform areas of the major soil types prevailing on these plantations. Since these soil types vary in origin, parent materials, texture, drainage, and other characteristics, it was expected that their fertilizer requirements for sugarcane production would likewise vary. Further, there was evidence that on the most extensive soil types, Yazoo and Sharkey, increases in yield of sugar per acre resulting from fertilization also varied considerably in different areas.

In addition to the effects of varying kinds and quantities of fertilizer, yields of cane and sugar are also influenced by local or seasonal weather conditions. Further, minor variations in plots of soil on which experimental tests are conducted may influence the results secured. It is, therefore, important that experimental studies to determine the effect of fertilizer be conducted throughout a comparatively long period of years. Data presented in this article comprise averages of results of experiments with selected fertilizer treatments conducted in Louisiana from 1930 to 1943.

Experimental fields were carefully selected for their uniformity from areas of soil typical of the soil type being studied. It is not feasible to furnish herein details of soil treatment previous to time of planting but in general a preceding crop of legumes, or legumes and corn, had been plowed under in accordance with practice customarily followed in Louisiana. The experimental plots were replicated and randomized in order to minimize effects of possible variations in the soil. Individual plots were usually 4 rows wide by 30 feet long, equivalent to approximately one-sixtieth of an acre.

The fertilizer mixtures, prepared at the Houma Station, were applied as a side dressing on each side of the cane row. The material was distributed, by hand, as uniformly as possible in the off-bar furrow and covered by returning soil to the furrow. The amount of a mixture required for each row was weighed separately to insure a more uniform application to the plot as a whole. These fertilizer mixtures were applied in the spring at the same time fertilizer was being applied to other cane on the plantations. After fertilization, the experimental fields were given the same agricultural treatments as other cane fields on the plantations. At harvest, the cane from the two center rows of each plot was weighed, and a sample taken to the Houma Station for analysis, including Brix and sucrose in the crusher juice and also other constituents such as nitrogen, phosphoric acid, potash, etc.

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The American Cane Growers' Assn.
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In many of the early fertilizer experiments the Schreiner triangle[2] system was used in order to test a wide variation of mixtures and obtain in a short time an approximation of the most desirable fertilizer mixtures for more detailed study. These experiments indicated that 36 pounds of nitrogen per acre with small amounts of phosphate or potash or both, and 60 pounds of nitrogen per acre, were most promising for further study. A fertilizer treatment of 36 pounds of nitrogen alone was included for comparison with 36 pounds of nitrogen plus phosphate or potash or both, and extensive tests were made comparing the following fertilizer treatments: no fertilizer, 36-0-0, 36-12-12, and 60-0-0. (36-0-0 indicates that the fertilizer application per acre was 36 pounds of nitrogen, no phosphate, and no potash). Somewhat less extensive tests included the above treatments, and in addition, 36-24-0 and 36-0-24. Nitrate of soda, 20 percent superphosphate, and muriate of potash were generally used as the source of, respectively, nitrogen, phosphate and potash. Increases in yield of sugar per acre from the use of 36-0-0, 36-12-12, and 60-0-0 treatments, as compared to the unfertilized controls, for plant and for stubble cane on the major types, are shown in table 1.

TABLE 1—Effect of Certain Fertilizer Treatments on Yield of Sugar per acre from Sugarcane Grown on the Major Soil Types.

Soil Type	Crops	No. of Tests	Increase in pounds of sugar per acre required for significance at odds of		Increase in pounds of sugar per acre over unfertilized controls		
			19 to 1	99 to 1	36-0-0[1]	36-12-12[2]	60-0-0[3]
Yazoo	Plant	37	141	187	150	264	162
Yazoo	Stubble	36	169	224	687	755	802
Sharkey	Plant	25	150	200	677	639	879
Sharkey	Stubble	23	190	253	790	775	1114
Franklin	Plant	18	211	281	389	526	463
Franklin	Stubble	21	233	310	632	633	917
Iberia	Plant	2	N. S.[4]	N. S.[4]	353	741	206
Iberia	Stubble	3	N. S.[4]	N. S.[4]	667	613	873
Lintonia	Plant	2	N. S.[4]	N. S.[4]	66	172	323
Lintonia	Stubble	3	N. S.[4]	N. S.[4]	1030	1533	1336

[1] 36 pounds of nitrogen per acre.
[2] 36 pounds nitrogen + 12 pounds P_2O_5 + 12 pounds K_2O per acre.
[3] 60 pounds nitrogen per acre.
[4] Differences in yield due to fertilizer treatments are not significant.

These results show that for plant cane grown on Yazoo soil, a significant increase in yield of sugar per acre was obtained with the use of each of the 3 fertilizer treatments, but that there was no significant difference in yield between treatments. For stubble cane grown on Yazoo soil, a highly significant increase in yield of sugar per acre was obtained with each of the 3 fertilizer treatments, with no significant difference in yield between treatments. In a smaller number of tests 36-12-12 was compared with 36-24-0 and 36-0-24. Differences in yield of sugar per acre on both plant and stubble cane for these 3 treatments (data not given herein) were small and were not significant. Since the Yazoo soil extends over a comparatively large area of the sugar belt, increases in yields of sugar per acre were also compared by locations. These comparisons showed that in the vicinity of Cinclare, Napoleonville, and on one plantation south of Houma, the average increases in yield of sugar per acre due to fertilization of plant cane were well below the average increases for plant cane on Yazoo soil reported in table 1. Experiments on other plantations near Houma showed somewhat better than average increases in yield of sugar per acre for the 3 fertilizer treatments, while experiments located near Thibodaux and Raceland showed considerably higher increases in yield of sugar per acre than the average increases

shown in table 1. The average increases in yield of sugar per acre for stubble cane grown on Yazoo soil at these different locations were somewhat variable, but profitable incresaes in yield were obtained at every location.

For both plant and stubble cane grown on Sharkey soil, highly significant increases in yield of sugar per acre, as compared to the the unfertilized controls, were obtained with each of the three fertilizer treatments shown in table 1. Further, the 60-0-0 treatment gave a highly significant increase in yield of sugar per acre as compared to the 36-0-0 and 36-12-12 with both plant and stubble cane. Differences in yield between the 36-0-0 and 36-12-12 treatments were small and wre not significant. In a small number of tests the yields of sugar per acre obtained from both plant and stubble cane with the use of 36-12-12, 36-24-0, and 36-0-24 were compared. Average results showed that 36-12-12 gave yields that were slightly, but not significantly, better than 36-24-0 and 36-0-24. Comparisons of increases in yield of sugar per acre from the 36-0-0, 36-12-12, and 60-0-0 fertilizer treatments with the unfertilized controls showed that for both plant and stubble cane on Sharkey soil the average increases at different locations were profitable, but that these increases tended to be smaller near Cinclare than in other areas.

For both plant and stubble cane grown on Franklin soil, highly significant increases in yield of sugar per acre were obtained with the use of 36-0-0, 36-12-12, and 60-0-0, as compared to the unfertilized controls. On plant cane, there were no significant differences in yield between these three treatments, but on stubble cane 60-0-0 gave a significantly better yield than 36-0-0 or 36-12-12. In a smaller number of tests the yields of sugar per acre obtained from both plant and stubble cane with the use of the 36-12-12, 36-24-0, and 36-0-24 treatments were compared. Average results showed no significant differences in yields between these three treatments.

Few of the fertilizer treatments shown in table 1 are available for Iberia soil. In a limited number of tests, comparisons of yields of sugar per acre from other fertilizer treatments (data not given herein) showed yield differences in favor of 12-4-4 for plant cane and 20-0-0 for stubble cane, but none of the differences could be established as significant with the limited data now available.

Few comparisons of the fertilizer treatments shown in table 1 are available for Lintonia soil. In limited tests, comparisons of yields of sugar per acre from the fertilizer treatments 36-12-12, 36-0-24, and 36-24-0 (data not given herein) showed that yields were somewhat better with use of 36-24-0 on plant cane and with use of 36-0-24 on stubble cane, but none of these differences could be established as significant.

Table 2 shows increases or decreases in sucrose and purity of crusher juice of cane fertilized with 36-0-0. 36-12-12, and 60-0-0 as compared to the unfertilized controls.

On Yazoo soil each of the three fertilizer treatments resulted in significant reductions in purity of crusher juice from plant cane in comparison with purity of crusher juice from the unfertilized controls. Differences in sucrose and purity resulting from the use of the 36-0-0 treatment as compared with the 36-12-12 treatment were not significant. The use of the 60-0-0 treatment resulted in increased reduction in sucrose and purity as compared with both the 36-0-0 and the 36-12-12 treatments. For stubble cane a significant reduction on purity of crusher juice resulted from the use of the 60-0-0 treatment as compared with the unfertilized controls. Differences in sucrose and purity of crusher juice of cane fertilized with the 36-0-0 treatment compared with the 36-12-12 treatment were not significant. Significant reductions in sucrose and purity of crusher juice resulted from the use of the 60-0-0 treatment as compared with both the 36-0-0 and the 36-12-12 treatments.

TABLE 2—Effect of Certain Fertilizer Treatments on Sucrose and Purity of Crusher Juice from Sugarcane Grown on the Major Soil Types.

Soil Type	Crops	No. of Tests	Deviation from unfertilized controls					
			36-0-0[1]		36-12-12[2]		60-0-0[3]	
			Sucrose	Purity	Sucrose	Purity	Sucrose	Purity
			%		%		%	
Yazoo	Plant	37	—.34	—1.00	—.30	—.84	—.54	—1.34
Yazoo	Stubble	36	—.17	—.71	—.09	—.64	—.39	—1.50
Sharkey	Plant	25	+.02	—.11	+.08	—.11	+.02	—.03
Sharkey	Stubble	23	—.09	—.10	.00	—.03	—.15	—.34
Franklin	Plant	18	+.07	+.05	+.09	+.22	—.15	—.33
Franklin	Stubble	21	+.21	+.31	+.21	+.35	+.14	+.18
Iberia	Plant	2	+.21	+.09	+.15	+.34	+.12	+.20
Iberia	Stubble	3	—.50	—2.42	—.21	—1.03	—.07	—.61
Lintonia	Plant	2	—.59	—1.90	—.47	—1.68	—.41	—1.47
Lintonia	Stubble	3	—.62	—1.90	—.56	—1.75	—.86	—2.77

[1] 36 pounds nitrogen per aere.
[2] 36 pounds nitrogen + 12 pounds P_2O_5 + 12 pounds K_2O per aere.
[3] 60 pounds nitrogen per acre.

On Sharkey soil the changes in sucrose and purity of crusher juice from both plant and stubble cane were very small and did not vary significantly with the use of any of the 3 fertilizer treatments as compared with the unfertilized controls.

On Franklin soil none of the three fertilizer treatments resulted in significant changes in purity or sucrose of crusher juice from either plant or stubble cane as compared with the unfertilized cotrols.

On Iberia soil all of the treatments resulted in an important reduction in purity in stubble cane but not in plant cane. None of the three treatments resulted in significant changes in sucrose in plant or in stubble cane.

On Lintonia soil reductions in sucrose and purity of crusher juice from cane fertilized with the three treatments listed in table 2 were greater than reductions in most cases on any of the other soil types discussed.

Because of the limited number of tests conducted on Iberia and on Lintonia soil the data presented are inadequate to indicate more than the trend of results to be expected from the 3 fertilizer treatments on these soil types.

[1] The authors are indebted to Mr. A. M. O'Neal an l M R. L. Holmes, who eonducted most of the field experiments used in this survey.

[2] Sehreiner, Oswald, and Skinner, J. J. Triangle System of Experimentation. Jour. Amer. Soe. Agron. 10: 225-246. 1932.

The Sugar Front for 1945

Office of Price Administration

The Facts About Sugar

From its beginning in April 1942 until a few months ago sugar rationing rested lightly on most housewives' shoulders. The program was working smoothly. Store shelves were well-stocked. About 14 months ago when the submarine menace was eliminated from the ship lanes between Cuba and American ports, it even seemed likely that rationing might soon be eliminated entirely.

But today sugar supplies are feeling the real pinch of a long war. Stocks are abnormally low. Military needs are high. Ships which might otherwise be bringing sugar into the United States are hauling supplies to the battle fronts. Manpower for the refineries is

scarce. Production cannot be measurably increased.

If we are to live within the available civilian quota in 1945 . . . and if each American family is to be assured of a fair share of that quota, tighter rationing will be necessary.

The Problem We Face in 1945

A. OUR WORKING INVENTORY IS ABNORMALLY LOW RIGHT NOW. . . . We are going into 1945 with the smallest sugar stock in years. A smooth rationing operation requires a basic working inventory large enough to maintain at least small stocks in stores throughout the country. An inadequate inventory invariably results in local shortages which make ration currency worthless at least temporarily. Sugar stocks have fallen from 2,613,000 tons on January 1, 1940 and 1,761,000 tons on January 1, 1944 to an estimated low of 1,300,000 tons on January 1, 1945. There are four main reasons for this:

(1) Civilians consumed about 500,000 tons more sugar than we could afford in 1944. The Black Market accounted for a small part of that overdraft, but the home canning program was chiefly responsible. Supplies of commercially canned fruit for civilians had been short for several months. The 1944 fruit crop was larger. Every effort was made to encourage home canning by cutting all possible red tape and making it easier for legitimate home canners to get the sugar they needed. Two things happened: (a) The legitimate demand was unexpectedly heavy. (b) Thousands of people took advantage of the easier requirements and applied for far more sugar than they needed for canning.

(2) The 1944 beet sugar production (1,050,000 tons) was 500,000 tons below the normal average.

(3) Due to the shortage of grain, 900,000 tons of sugar which would otherwise have been available for civilian use was diverted to the production of industrial alcohol for synthetic rubber and munitions. Plentiful grain crops will make this diversion unnecessary in 1945.

(4) Restricted shipping during the latter part of the year.

B. WE MUST GET ALONG WITH LESS SUGAR IN 1945. . . . In 1941 civilians ate 7,350,000 tons of sugar in all forms . . . about 104 *pounds* per person. In 1944 we used 6,100,000 tons or 88 *pounds* per person. In 1945 we must live within a quota of 5,400,000 tons—78 *pounds* per capita. This is the same as the 1944 *quota*—but it is about 700,000 tons (or about 10 pounds per person) less than was actually *used* by civilians in 1944. And there is simply not enough sugar available to allow for an overdraft in 1945. We are starting the year with a first quarter allocation of 1,200,000 tons compared with 1,308,000 actually used in the first quarter of 1944.

C. SHIPPPING AND MANPOWER ARE STILL SHORT. . . . Ships are simply not available in unlimited numbers to bring sugar into United States ports while war supplies are badly needed abroad. Even if the ships were available to bring in all the sugar we could get, the manpower problem in many large refineries would slow down production.

D. MILITARY AND OTHER GOVERNMENT REQUIREMENTS WILL BE LARGE IN 1945. . . . During 1944 the armed forces used about 1,000,000 tons of sugar and Lend Lease took another 300,000 tons . . . a total of 1,300,000 tons. In 1945 it is estimated that military and Lend Lease requirements will total 1,600,000 tons —or about 106 pounds for every family in the United States. (*Each soldier actually consumes over twice as much sugar a year as the average civilian now receives.*)

E. WHY CAN'T SUGAR PRODUCTION BE INCREASED IN 1945?. Three-quarters of our 1945 sugar supply must come chiefly from Hawaii, Puerto Rico and Cuba. Production from these areas has already been sharply increased. For example, Cuba's production is 2,000,000 tons above prewar levels. Further increases in planting could not affect the sugar supply until 1946 and 1947.

Here Is What Will Be Done to Meet the Problem

In order to maintain a fair and effective sugar rationing program in 1945 with reasonably even distribution in stores throughout the country to redeem all coupons as they are presented, the following steps are being taken:

(1) First quarter sugar allotments for most of the industrial users will be further reduced as announced December 15, 1944.

(2) Allotments for restaurants and institutions will be reduced about 10%.

(3) Enforcement of sugar rationing regulations will be tightened by various methods.

(4) Issuance of sugar rations for home canning will be tightened to eliminate over-application.

(5) Individual rations for at least one period will be five pounds every three months instead of five pounds every two and one-half months.

(6) In order to avoid sharper cuts in the value of individual sugar rations in the first quarter of 1945 . . . and to insure that all housewives will be able to redeem their 1945 coupons for their fair share of sugar, unused 1944 stamps (but not stamp No. 34 issued on November 16th) and home canning certificates have been invalidated. Although it has always been the Government's intention to give advance notice of any invalidation of ration currency, it was obvious that with sugar stocks so low, this action had to be taken overnight for the protection of the big majority of consumers. If advance anouncement had been made in this case, the old coupons in the hands of a few might easily have cleaned out our small sugar stocks, making it impossible for the vast majority of housewives who have only current coupons to get any sugar at all.

If the European war had ended in the fall of 1944 as many people hoped it would, it might have been possible to keep sugar available to cover the possibility that old stamps, which were apparently not needed by the families who held them in 1944, might some day be used. However, with sugar stocks at an all-time low and with the war continuing with greater intensity into 1945, sugar supplies will simply not be sufficient to insure that *both* 1945 stamps and old currency could be honored. If the old currency were brought to bear against the 1945

stocks, sugar distribution would be on a catch-as-catch-can basis rather than on a basis of fair rationing.

National Food Situation

(Summary of the Bureau of Agricultural Economics, U.S.D.A.)

When prospective supplies of various foods for the first quarter of 1945 are compared with those available to civilians in the same period of 1944, reductions in the supplies of meat, poultry, butter, evaporated milk, potatoes, fresh vegetables, and perhaps lard will not be entirely compensated for by the expected increases in fluid milk, American cheese, and fruits other than citrus. Citrus supplies will be about the same as last year. In comparison with the pre-war period, it appears that as much meat, lard, and fresh vegetables will be available, but potato and butter supplies, particularly butter, will be below average. Despite these reductions, civilians will not be faced with any over-all food shortage. Supplies of fluid whole milk, non-fat dairy products including cottage cheese, buttermilk, chocolate milk and dry solids, eggs, fish, margarine, cereal products, dry peas and citrus fruits will make possible a level of food consumption at least as high as the pre-war level, although different in composition.

During 1944 civilians were eating meat at the annual rate of 140 to 145 pounds per capita, 15 to 20 pounds above the 1935-39 average. Total meat supplies in January, February, and March will be smaller than either the first or fourth quarter of 1944 because stocks are low and meat production is expected to be 10 to 12 per cent less than in either quarter. Along with smaller total supplies, war requirements will be larger so civilian supplies of meat may not be much above the 1935-39 average. Civilian pork supplies will continue at the rate of the last few months, which is below the very large quantities which have been available in the past 2 years. During the January rationing period a much larger proportion, about 85 per cent, of the trimmed retail cuts of meat will have ration point values above zero.

Supplies of eggs are expected to be large enough to permit consumption to continue at record seasonal levels. Poultry supplies will be shorter because of smaller production and large military procurement.

During the first quarter of 1945, civilians probably will receive somewhat greater supplies of fluid milk, American cheese, and non-fat milk solids (dried form, cottage cheese, buttermilk, and chocolate milk) than in the same period of 1944, but significantly smaller supplies of butter, and slightly less evaporated milk. The butter shortage has been accentuated by the 11 percent drop in production from this time last year. Lard production is down considerably from last year's record production because of the big cut in hog slaughter. Civilian supplies will be reduced if exports continue large. In the past, reductions in the civilian supplies of lard have been reflected in increased demands on shortening. Accordingly, although actual supplies of shortening may be about the same as in October-December, they might appear to be less if this shift in demand occurs.

Despite the effects of the Florida hurricane, the citrus fruit crop in 1944-45 is expected to be nearly as large as the huge crop last year and abundant supplies will be available for civilian consumption during the winter. Apple and pear stocks for civilian consumption this winter are much larger than last year.

Fresh vegetable supplies for the next few months may be smaller than last year, but they are expected to be above the pre-war level. However, potatoes may be rather short because the total late crop was about 18 percent smaller than last year's exceptionally large crop, but nearly 4 percent more than the 1933-42 average. In addition, considerably more appears to have been marketed already than is usual by this time. Even though war requirements are about the same as last year, they constitute a larger proportion of the total supply this year.

Home canned vegetables and fruits and winter storage vegetables from last summer's Victory Gardens will be very useful in supplementing commercially processed vegetables and fruits and fresh market supplies this winter.

Official Release

(*Limitation Order* L-292, *Quota Schedule V-A, as Amended June* 6, 1944)

Production Restrictions In Lieu of Quotas For Sugar Processing Machinery and Equipment

1226.204 Restriction on production of sugar processing machinery and equipment (a) *Purpose of this schedule.* The purpose of this schedule is to permit the manufacture of a limited quantity of sugar processing machinery and equipment during the period from October 1, 1944 to September 30, 1945. Paragraph (f) of Order L-292 provides for the fixing of production quotas for food processing machinery by the War Production Board. The provisions of this schedule take the place of the quota provisions in paragraph (f) of Order L-292 with respect to sugar processing machinery and equipment.

(b) *Number of units which may be manufactured, until individual production quotas are fixed.* During the twelve months period beginning October 1, 1944, or until he is issued an individual production quota under paragraph (b-1) below, each manufacturer may fabricate or assemble any sugar processing machinery or equipment necessary to fill orders actually received by him if the orders are rated AA-5 or higher. In addition, each manufacturer may fabricate or assemble the number of units of centrifugals and sugar sprayers necessary to maintain a maximum inventory of two units of centrifugals and three units of sugar sprayers. A manufacturer must not fabricate or as-

CALCIUM ACONITATE ACID

The operation of a pilot plant at the New Iberia Sugar Cooperative this season with the production of several tons of calcium aconitate is the first time that a natural source of aconitic acid has been developed. This plant demonstrated that 2 pounds or more of calcium aconitate could be extracted from a ton of Louisiana sugar cane, and represents a potential gross increase in income to sugar producers to $.30 to $.40 per ton of cane based on pre-war values of aconitic acid. Additional information on the details of the process were not available at this time as it is the subject of a public service patent. Work on this process was carried on cooperatively between the New Iberia Sugar Cooperative, The Louisiana State University, and the Agricultural Chemical Research Division, Agricultural Research Administration, United States Department of Agriculture.

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semble any sugar processing machinery or equipment other than centrifugals and sprayers for inventory.

(b-1) *Individual production quotas.* No person shall fabricate or assemble any sugar processing machinery and equipment except those quantities which he has been specifically authorized to produce under authorized production schedules, in units or dollars, issued him pursuant to CMP Regulation 1. Authorized production schedules will be issued as soon as practicable. The general policy of the War Production Board will be not to authorize total production by all manufacturers in a quantity which exceeds the aggregate production permitted during the fourth calendar quarter of 1944. Until such time as the War Production Board has issued an authorized production schedule to a particular person, however, he is permitted to carry on production to the extent permitted under paragraph (b) above.

(c) *Applicability of Limitation Order L-292.* Except as otherwise indicated herein, this schedule is subject to all applicable provisions of Limitation Order L-292 as amended from time to time.

Issued this 6th day of January 1945.

Federal Register January 9, 1945.

WAR PRODUCTION BOARD,
By *J. Joseph Whelan,*
Recording Secretary.

URGE MAXIMUM PRODUCTION

WHEREAS, the War Food Administration and other Governmental Agencies have been urging increased production of sugar and

WHEREAS, the Louisiana Sugar Industry has been complying with this urgent request for increased sugar production by consistently and materially increasing production from 1940 through 1943 inclusive, and

WHEREAS, because of weather conditions which affected the plant and especially the stubble cane, the 1944 acreage showed a slight decrease and unfavorable growing weather conditions caused a further reduction in production

THEREFORE BE IT RESOLVED that the Louisiana Sugar Producers' Club (Western Division) urges all producers of sugarcane for sugar (large and small) to make every effort to maintain in production the maximum acreage possible. This can be done by scrupulously scrutinizing all acres of stubble and not destroying any acreage showing any recoverable possibility of producing a fair tonnage of sugarcane.

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(Florida Wage Rates)

Pursuant to section 301 (b) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, and Executive Order No. 9392, issued October 28, 1943, the following determination is hereby issued:

Fair and reasonable wage rates for persons employed in the harvesting of sugarcane in Florida during the period September 1, 1944, to June 30, 1945. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the harvesting of sugarcane in Florida during the period from September 1, 1944, to June 30, 1945, if all persons employed on the farm during that period in the harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates as agreed upon between the producer and the laborer, but not less than the following:

(a) On a time basis.

All work except as otherwise specified:	*Rate per hour (cents)*
Adult males	30.0
Adult females	25.0
Tractor drivers and operators of mechanical harvesting or loading equipment	37.5
Children between 14 and 16 years (maximum employment per day is 8 hours)	25.0

(b) *On a piece rate basis.* Adult males, adult females, and children between 14 and 16 years of age (maximum employment of such children is 8 hours per day).

(1) Type of cane:

	Rate per ton for cutting and loading as a combined operation	Rate per ton (excluding the loading operations)
Green sugarcane:		
Small barrel	$1.49	$1.01
Medium barrel	1.26	.85
Large barrel	1.09	.74
Burnt sugarcane:		
Small barrel	1.25	.78
Medium barrel	1.07	.67
Large barrel	.89	.56

(2) Piece rates for a particular harvesting operation calculated on a basis other than prescribed ni (1) above shall be such as to provide earnings per hour of not less than the applicable hourly rate specified in paragraph (a) above: *Provided, however,* That minimum earnings per hour shall not apply to prisoners of war but they shall be paid at the same piece rate as other laborers.

(c) *General provisions.* (1) That the producer shall furnish to the laborer without charge the customary perquisites, such as a habitable house, a suitable garden plot with facilities for its cultivation, pasturage for livestock, medical attention, and similar incidentals;

(2) That the producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined above.

Issued this 27th day of October, 1944.

ASHLEY SELLERS.
Acting Food Administrator.

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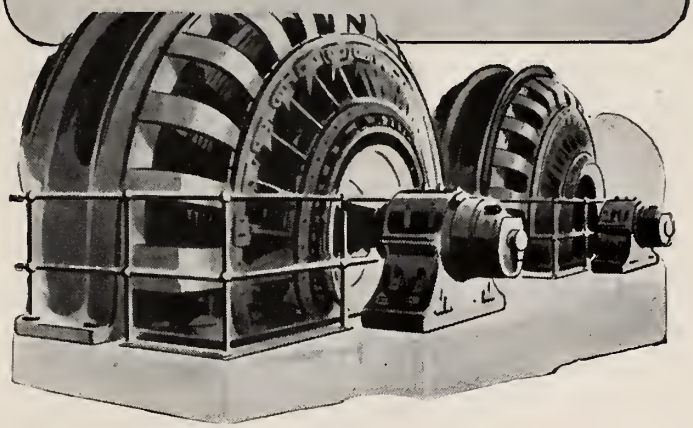

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against foreign Competition

Vol. 23 NEW ORLEANS, LA., FEBRUARY 1, 1944 No. 9

Maximum Production Urged

The Executive Committee of the American Sugar Cane League adopted the following Resolution at its meeting on Wednesday, January 31, 1945:

WHEREAS, the War Food Administration and other Agencies of the United States Government are urging the increased production of sugar to meet the needs of the war effort, and

WHEREAS, the record shows that the Louisiana sugar industry has been contributing materially to the war effort by increasing sugar production consistently since 1940, and

WHEREAS, in 1944, because of weather conditions which affected the plant and especially the stubble cane, there was a slight decrease in acreage and unfavorable growing circumstances which resulted in less production than had been hoped for

THEREFORE, BE IT RESOLVED by the American Sugar Cane League that all producers of sugarcane for sugar in Louisiana, regardless of the size of the farms, be and they are hereby urged to make every practicable effort to maintain in production a maximum acreage for harvest in 1945, and in so doing, each producer should provide proper fertilization of all acres growing sugarcane in addition to examining carefully the acres of stubble cane in order to avoid destroying cane on any acreage which shows a reasonable prospect of producing a fair tonnage.

BE IT FURTHER RESOLVED that copies of this appeal be mailed to each County Agent and to each newspaper published in the Sugar Belt with the request that it be brought to the attention of producers of sugarcane.

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12
MARCEL J. VOORHIES, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

in which are consolidated

The Louisiana Sugar Planters' Assn.
The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
Subscription Price, 50 Cents Per Year.

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Industrial Committee Meets

A meeting of the Industrial Committee of the American Sugar Cane League and the technical staff of the Louisiana State University was held January 23, 1945 at the Agricultural Building, Thibodaux, Louisiana. The meeting convened at 10:30 A.M. There were present:

Members of Industrial Committee of American Sugar Cane League: Mr. J. J. Munson, Chairman, presiding; Mr. F. Evans Farwell, Mr. M. V. Yarbrough, Mr. E. W. McNeil, Mr. J. T. Landry, Dr. A. G. Keller, Mr. Irving E. Legendre, Mr. Samuel B. Pertuit, representing Mr. Horace Nelson.

Members of the Technical Staff of Louisiana State University: Dr. Leo J. LaSalle, Dean of the College of Engineering, L. S. U., Dr. Schwartz, of the Engineering College, L.S.U., Dr. C. W. Stewart, Superintendent, Audubon Sugar Factory, L.S.U.

Mr. J. J. Shaffer, Jr., President of the American Sugar Cane League, Mr. Marcel J. Voorhies, General Manager of the American Sugar Cane League, Mr. W. A. Rolston, of the South Coast Corporation, Mr. Murphy, of Sterling Sugars, Inc.

The meeting was called to order by Mr. J. J. Munson, who requested Mr. Voorhies to explain the purpose of the meeting.

Mr. Voorhies explained that about two weeks ago he had been requested by Dr. Schwartz to see him at the first opportunity that presented itself. A few days later Mr. Voorhies stated, he had had a talk with Dr. Schwartz, Dr. Stewart and Dr. Horton, who wanted to discuss the technical problems of the sugar industry. Mr. Voorhies had suggested that members of the technical staff of the University meet with the Industrial Committee of the League, stating that he thought it would be an excellent idea to establish relations between that Committee and the technical staff of L. S. U. similar to the relations which exist between the Contact Committee and the members of the Experiment Station Staffs of L. S. U. and the U. S. Department of Agriculture at Houma, La.

Dr. LaSalle stated that during the last few years the University did not have a full time man to devote his services to the chief operation of the Audubon Sugar Factory. He stated that it was the purpose of the University to find out what can be done to assist the sugar industry, and what steps should be taken to accomplish results, whether in the experimental sugar mill, the engineering experiment station in agriculture, or any other department, and to set up the means in each department to obtain results. As the American Sugar Cane League is the clearing house for the industry, Dr. LaSalle said, the University officials wished to consult the League to find out what should be done and what can be done.

Dr. Stewart read the following document which he had prepared:

Proposed Research Program for the Utilization of the Sorgo Plant in Louisiana as a Source of Feed, Sugar, Starch and Aconitic Acid

Sorgo is grown extensively in the United States for use as stock food and during the past three years it has been processed by Louisiana sugar factories to the extent of 27,000 tons for the production of alcohol. It was determined from this work that the sorgo bagasse from a modern mill could be fed with good re-

sults to stock. The principal method used in the past for preparing and keeping whole sorgo are as ensilage and by field drying. Due to climatic conditions in Louisiana neither of these methods have been satisfactory. In either method it should be pointed out that the stalk juices are wasted due to the fact that the soluble carbohydrates are lost by fermentation.

The sorgo milled in this program was not stripped and included all the leaves as well as a good portion of the seed. This suggested that the whole stalk, including the seed heads, might be processed rapidly by the sugar factory to convert the crop into feed and at the same time to take advantage of the equipment for extracting the otherwise wasted stalk juices and extracting from them sugar, starch, and aconitic acid. Such a program, if successful, would provide Louisiana considerably feed production of much needed stock food and at the same time utilize the facilities afforded by sugar factories at least two months longer. The ultimate goal of such a program would be to operate the sixty Louisiana factories 2½ months on sorgo which is equivalent to ten plants operating year round valued at approximately one million dollars each.

The purpose of this program is to determine a new utilization of an old crop in a manner fitting the needs of present day conditions such as the production of large quantities of feed, sugar, and by-products with a minimum use of labor. However, such a program is not limited to the present time but is also a program ideally suited to post-war industrial development. This program can be immediately implemented without raising large sources of capital for building plants. To be specific, should the program be adopted, almost immediately the state could have the equivalent of ten one million dollar agricultural products processing plants added to its economy.

At the present time the new varieties of sorgo available for sugar production and feed products yield from 10 to 12 tons per acre in Louisiana. To increase the per acre yield of sorgo, the U. S. Department of Agriculture had imported large African varieties for breeding and they estimate that it will take from 7 to 10 years for such a program to bring forth improved varieties from this work. Methods have been devised by the U. S. Department of Agriculture for the crystallization of sugar, aconitic acid, and starch in sorgo juices and the principal purpose of the program proposed is to test the production of feed from sorgo with the production of sugar, aconitic acid, and starch being incidental permitting development of refinements in these processes.

From a ton of sorgo there is obtained at least one bushel of grain which has been established to have the feed value of 95 per cent of that of corn. It is proposed that this grain will be included in the bagasse for use as feed. In the New Iberia section of the state where facilities are available, several farmers grow sorgo and have dehydrated for use as stock food. As this dehydration process is a direct fired operation and the sorgo plant contains approximately 70 per cent moisture such a method of treating stock food is necessarily too costly. It may be pointed out here that under the proposed process the milling operation will reduce the amount of moisture to be removed by direct fired drying from 70 per cent to 25 per cent and further the sugar and other constituents of the juice will have sufficient value to pay for the final dehydration.

Plan of Work

Sorgo cane will be grown, cut with a cane machine, and ground with leaves and seed heads attached. The resulting bagasse will be dried to 8 per cent moisture and mixed with four gallons of waste molasses and baled as a finished stock food. The juice extracted by the mills will be subjected to centrifugal force to remove starch; limed, heated, settled, and evaporated into sirup. This sirup will be treated with enzymes to remove the final traces of starch and heated to precipitate the aconitate, the aconitate separated, washed, and dried, and sugar extracted by the usual methods used in a cane sugar factory.

The processing of 12,000 tons of sorgo in 1942 at the New Iberia sugar factory using the leaves as well as the stalks and a fair proportion of seed heads showed that 43.47 per cent of the cane entering could be expected as bagasse having a moisture content of 53.67 per cent. The amount of bagasse would be increased if the seed heads were not removed at all to the extent of approximately sixty pounds of dry seed per ton of cane. The inclusion of the leaves and seed resulted in a yield of sugar and other products obtained with the exception of starch to be 3/5 of that expected when cleaned cane is milled. Sorgo cane at the Meridian, Mississippi, station conservatively showed an average sugar yield of 156 pounds. Inasmuch as the proposed operations have never been done in manner prescribed to give the products suggested, it is necessary that previous experience be used and a conservative estimate of the products to be expected from such operation is given below.

Table 1

Estimated Value of Products from One Ton Sorgo

Bagasse feed—520 lbs. at $15.00 per ton	$3.90
Sugar 96° pol—94 lbs. at $3.75 per 100 wt.	3.52
Aconitate—5 lbs. at $.15 per pound	.75
Juice Starch—10 lbs. at $.02 per pound	.20
Total value ton of sorgo	$8.37

The development of the Audubon Sugar Factory to a point of efficiency where it is capable of accurate experimental work in the processing of sugar canes and sorgo canes, this to include the milling of the canes and the processing of the extracted juices with resultant records that can be, more or less, used as a standard for the industry.

It is our opinion that the factory here at the University should be provided with the best obtainable equipment of modern design, so selected and installed that the factory would be a balanced unit; that is, that the mill and boiling house have an equal capacity, with the flexibility necessary in an experimental plant.

This development will of necessity begin in the cane yard, and be designed so as to insure a regular even feed of cane to the mill. As you know, good milling depends on an even feed to the mills, proper preparation of this feed, the required mill setting, and the proper amount and application of maceration water. At the present we are unable to feed the

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mill with any degree of regularity. The feeding is done by hand, and as the mill feed conveyor is only two feet wide, we will need another type of feeder table, also an auxiliary feeder carrier equipped with a set of knives. This feeder carrier should be 40 feet long and 4 feet wide with the knives set at the discharge end directly over the mill conveyor. The feeder table should be equipped with feeder chains driven from a shaft and sprochets, motor powered, with Rheostat speed control.

By laying the cane on the feeder table, which should be large enough to accommodate three bundles of cane at the time, it can then be fed into the auxiliary conveyor mechanically, and as it comes up to the end of this conveyor, it will be cut and discharged into the smaller mill feed conveyor. The conveyor to the mill is equipped with a set of knives at the present, and it is our opinion that a second cutting of the cane will prepare it much better for the process of juice extraction at the mills.

The mills are in very good condition; it will be necessary, however, to have rolls turned and flanges of top rolls refaced. The bearings of the cane roll in Mill No. 3 will have to be replaced. The turnplates and scrapers will also have to be renewed. The test rolls used in special mill tests are not equipped with crown wheels, and when they are to be installed in the mill, we have to change the crown wheels; this causes loss of time and has resulted in scarring both crown wheels and keys. The George L. Squire Mfg. Co. has quoted us a price of $633.00 for the three crown wheels and keys complete, which we think should be purchased and installed.

At this factory the boiling house does not have the capacity of the mills and for that reason, the grinding rate has to be reduced and also the maceration water has to be cut to the minimum.

The clarification can be taken care of by the addition of two more open settlers at a small expense but the concentration of the juices into syrup and the boiling of the syrups into sugar is the major problem. As we all know, the more rapidly the raw material is processed and turned out as a finished product, the less inversion we have and a better recovery of sugar is obtained.

To speed up this operation and prevent the accumulation of a large quantity of raw material, we recommend the installation of a pre-evaporator and a calandria vacuum pan. The installation of these two units will balance the plant and reduce our steam consumption and labor cost.

The pre-evaporator would be of a size sufficient to produce vapors for the heating of juice in the juice heaters and for the operation of the triple effect and vacuum pan; therefore we would get a double-effect economy on our steam consumption.

To recover the juices from muds obtained by the clarification of cane juices, we recommend the installation of a rotary vacuum filter to replace the old type filter presses now in use. This would also aid in speeding up the process by liquidating the muds more quickly and in addition, it would lower the labor cost.

If the Sorogo investigation is to be made, we will require two high-speed 40-inch centrifugals for starch removal in addition to the above mentioned equipment.

Estimated Costs

1	5-foot pre-evaporator	$3,000.00
1	6-foot calandria pan	4,000.00
1	conveyor, 40-foot centers	950.00
1	10 h.p. motor and reducing gears	350.00
1	Derrick, 45-foot boom	10,500.00
1	platform scale	1,200.00
1	Oliver Campbell filter	6,500.00
2	high speed 40-inch centrifugal machines	7,600.00
1	cane feeder table	3,000.00
1	set knives	2,500.00
1	addition to spur for cane delivery in RR cars	2,000.00
		$41,600.00
	15% for installation	5,340.00
		$46,940.00

Due to the difficulty experienced in the Louisiana factories this season with clarification of cane juices, we think some experimental work should be done in an attempt to find new defecants or get better results from the old methods.

Fractional liming and double heating might be tried, also liming hot juice with lime slurry or sucrate of lime.

The sucrate process might be investigated to see if it is any improvement over the old method.

This process was tried by Gilchrist some years ago and I understand that from a point of clarification it gave good results but that the muds were very hard to filter; being of a gummy, sticky nature, they closed the pores of filter cloths quickly. This might be tried with an Oliver filter to handle the muds. (Spencer, page 56)

Phosphoric acid as an aid in conjunction with lime sometimes produces cleaner, clearer juice.

The centrifuging of cold juice to remove the insoluble solids might be tried to see if that would help with the clarification problem.

The search for new defecants would have to start in the Laboratory.

We will greatly appreciate your recommendations in outlining a program of investigation for the coming season.

At the Audubon Sugar Factory this season we made a number of tests on trashy cane, noting the effect on grinding rate, also the percentage of trash and the purity drop between crusher juice and mixed juice when grinding clean cane and when grinding trashy cane.

By weight the trash was found to be 11 to 12% and the grinding rate was found to be reduced about 16%. The purity drop between crushed and mixed juice when grinding clean cane was found to be 1.72% and when grinding trashy cane was 4.40%. These results are the average of four tests made on different dates during the past season and are not intended as authentic but indicative of what happens when trashy cane is milled.

One test was made showing the effect green tops

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have on the sucrose test of canes.

The cane was cut at the bud or spread of the leaves, then cleaned. Twelve inches were cut off of all the stalks tested (about 50). These juices were tested and found to contain about 0.37% sucrose. A second twelve inches was cut off and tested. The second test showed 2.37% sucrose. The remainder of the cane showed 12.81% sucrose. By a mathematical average the whole cane showed 11.18% sucrose. With the first 12 inches removed, the result was 11.61% and on a basis of standard cane the whole cane, or 11.18% sucrose, equals 94.00% whereas the cane, less one foot, of 11.61% sucrose, equals 100.00% standard cane.

A milling test was made with the Munson cross groove on the top roll of the third mill and some interesting results were observed. The rolls used in this mill were the test rolls purchased by the Cane League. At the beginning of the season these rollers were put on the mill with one quarter inch pitch circular grooving They were used for two weeks and gave quite a bit of trouble from choking. The bagasse showed 3.14% sucrose and the sucrose extraction was 89.14%. At the end of two weeks the regular rolls with one half inch grooves were installed. The only improvement noticed was fewer chokes; the mill work was about the same. A few days before the end of the season the test rolls were put back in the mill. The top roll had the Munson cross grooves cut in it. No choking occurred and there was a decided improvement in mill work. Bagasse had 2.46% sucrose and sucrose extraction was 91.82%.

The American Cynamid Co. has been conducting a series of tests in which they remove solid non-sugars from cane juices by the iron exchange process. The results produced a high grade syrup and a good grade of direct consumption sugar.

The J. J. Naugle Chemical Co of New York also tried out a new defecant for juice clarification with very good results. This material is supposed to be a byproduct of the mining industry.

Direct Consumption Sugar From Raw Cane Juice

By W. A. Blann, Chemist
American Cyanamid & Chemical Corp.
30 Rockefeller Plaza,
New York 20, N. Y.

During the 1944 sugar cane season an experimental pilot plant was operated in the Audubon Sugar Factory for the purification of sugar cane juices by a recently developed process incorporating ion exchange resins. The method of purifying the sugar cane juices by the application of ion exchange treatment is a radical departure from methods heretofore used.

It is generally known that ion exchange treatment removes minerals from watersolutions and is usually considered a demineralization process. When sugar cane juices are de-ionized by this new process non-sugar solids other than minerals are also removed and there results a highly purified sugar solutions consisting principally of sucrose, dextrose, and levulos. The elimination of non-sugars from juices results in sirups substantially higher in purity than those obtained by standard sugar house practice or by earlier methods of ion exchange treatment. When these sirups are exhausted by crystallization of sucrose to the same degree common to present sugar manufacturing practices, an increased yield of sugar results.

One of the outstanding features of the process is that the ion exchange treatment is not superimposed upon the usual methods of defecation. It is in itself a process for the production of juice from which high purity direct consumption sugars and high grade edible molasses can be obtained.

The following data is indicative of the products obtained by means of this new ion exchange process.

Typical Analyses of Ion Exchange Treated Cane Juice

	Raw Juice	*Ion Exchange Treated Juice*	*Final Molasses*
Purity (Clerget)			
% Sucrose	76.75	88.4	39.0*
Invert %	8.44	9.9	49.6
Non-Sugar Solids %	14.81	1.7	11.4
Ash %	3.14	0.064	0.8

*Purity by direct polarization is 26.7%.

It is well known that the cane varieties grown for the production of sugar on the heavy dark soils of Louisiana produces sirups of darker color and stronger flavor than in other localities where sirup is produced from selected cane varieties grown on light sandy soils. Sugar cane juices treated by ion exchange are purified to the extent that they may be made into light colored mildly flavored sirups suitable for table use directly or for blending with the more strongly flavored sirups normally produced in Louisiana. By this method it is possible to produce a standardized uniformly high quality sirup.

The quality of the products produced, as well as the adaptability of the process to Louisiana conditions was decidedly favorable, and it is planned to undertake industrial exploitation in the immediate future.

Minutes Continued

Dr. Schwartz stated that in the Engineering Department they are interested in other fields of research besides sugar. L. S. U., he said, is particularly unique in its research work for sugar, and that looking at it from that point of view one would come to the conclusion that we should develop as far as possible our sugar activities because we are already in an enviable position in that respect. He stated that grants had been made to other universities through the Sugar Research Foundation and that L. S. U. had not received a contribution through the Foundation. One solution of making technical personnel available to the sugar factories that had been suggested was the establishment of fellowships at L. S. U. at a graduate

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level. These people would have graduated in chemical engineering and taken work toward an M.A. degree. A condition could be attached to the fellowship that the men taking up the work would have to accept work in the sugar industry. It would then be up to the industry to keep the men, provided they wanted and needed them; it is inconceivable for the sugar industry to secure a good man at a cheap price. The University is doing everything it can to assist the Audubon Sugar Factory. He expressed Dr. Horton's regret at not being able to be with the committee today.

It was agreed by the Industrial Committee that this Committee should definitely accept the invitation of the University insofar as the Committee will take the responsibility of representing the industry where this work is concerned. After the recommendations are made a report could then be submitted to the Executive Committee of the League for any action that should be taken.

Mr. Voorhies was requested to send a copy of the report submitted by Mr. Stewart to each member of the Industrial Committee, and to each sugar processor in the State, inviting their comments and suggestions.

Mr. Voorhies was also requested to publish the statement in the *Sugar Bulletin.*

Dr. LaSalle was asked whether he had any objection to publishing the statement and he replied that, to the contrary, they were looking for good publicity.

Mr. Shaffer was called on and suggested that some thought be given to the training of technical men for the operation of mechanical equipment in the field as well as for the factory. Mr. Irving Legendre stated that he was Chairman of a Committee which was working on the establishment of a Junior College and training school combined, and the Committee had met several times with the authorities at L. S. U. Funds had been earmarked for a trade school. One purpose of the school would be to have practical men take a course, and boys to learn to follow the trade after they have learned to overhaul tractors and other machines. He stated that some of the mechanics of the industry would be derived from this school.

A suggestion was made by Dr. Keller that the University add one or two men to its technical staff, preferably a chemist or chemical engineer, and a mechanical engineer, and that the industry furnish four fellowships on a year round basis at approximately $750.00 a piece.

The discussions resolved themselves into two ideas:

(1) The immediate needs of the Industry.
(2) The long range plan which includes the fellowships at the University and the training of men to handle mechanical machines in factory and field.

The Chairman appointed a committee to look into the phase of the matter with reference to making recommendations to the League on creating fellowships, as follows:

Dr. A. G. Keller, chairman; Mr. F. Evans Farwell, Mr. E. W. McNeil.

Mr. Munson appointed the following committee of three to receive comments from the various members of the Industrial Committee and from the processors and to correlate the suggestions and recommendations: Mr. J. T. Landry, chairman, Mr. Irving Legendre, Mr. Horace Nelson, the members of the Industrial Committee and the processors to be requested to send their recommendations to Mr. Landry, and Mr. Landry to then call the Committee of three together to correlate the reports and then submit them to Mr. Munson, Chairman of the Industrial Committee. Mr. Munson stated that he would then prepare the recommendations to be submitted to the University, and prepare the final report to the Executive Committee of the League.

There followed a discussion with reference to some thought being given to the invention of a cane cleaning device, the developing of by products, etc.

Mr. Pertuis, of Godchaux Sugars, suggested that experiments be conducted leading to the solution of the problem of the appearance of abnormal juice which is being reported by the sugar factories, the cause for which, whether it be something chemical which is taking place or otherwise, has not yet been found.

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The suggestion was made by Mr. Yarbrough that as other states in the South would benefit more than Louisiana from the sorgo project, that their support also be requested.

Mr. Landry brought up the point that some commercial machinery houses might be interested in furnishing their equipment at cost to the University, or in donating the machinery. The Chairman stated that he would be glad to write them and obtain their reaction.

After some further discussion the committee adjourned.

Post-War Planning

By C. J. Bourg

As your Washington Representative contemplates the approaching 1945 crop season and the future crop years, the conviction becomes stronger that the progress of the industry depends more upon united industry programs than independent individual action.

The trend towards mechanization has been increased by the needs and the problems of war time. Reducing the units costs of producing a ton of cane and a bag of sugar is a major objective. The efficiency of mechanical equipment depends largely upon the skill with which it is operated.

The war has absorbed most of our young men into the armed forces, thereby depleting almost entirely the ranks of the students who were being prepared in the technical professions and skills of operating sugar factories and modern sugarcane farms. Of all the manpower shortages, the thinning ranks of qualified technicians will present the most difficult problem of post-war adjustment.

The Congress has passed an Act, commonly referred to as the "GI Bill" which should offer a means of organized and well-planned rejuvenation for the Louisiana sugar industry. To gain the advantages which are possible, it becomes necessary for the industry to begin NOW to plan and arrange programs

There has been some discussion among the officials of the American Sugar Cane League which has led to the recommendation that a Committee be appointed to make a comprehensive study of the whole matter. By conferring with the administrative officers of our universities and junior colleges, it should be practicable to arrange for concentrated and speed-up courses to be offered to returning discharged veterans. Many of these young men who have had their education interrupted will not be inclined to go back to school unless a well thought out program is offered them. Such a plan could be worked out so that the provisions of the "GI Bill" would be made even more attractive to the veteran. The Government now offers the veteran the opportunity to complete his education at Government expense. If, in addition, the industry could arrange for speed-up courses with jobs available in the industry when the courses have been completed, the more able and worthy veterans will be encouraged to better themselves; and the industry will have insured its future.

In addition to the application of this idea to courses in Chemistry, Engineering and other professions, the program should be extended to offer manual training in mechanics and the skilled trades.

In the opinion of some leaders of the industry, we have progressed faster in mechanization than we have been able to provide skilled and experienced operators. The full benefit of the harvesters, loaders, cultivators and other recently developed equipment will not be realized by the industry until each such piece of mechanicism is being operated by a well trained man who understands the machine and the means of operating it at greatest efficiency.

Industry thinking is the only way that this feature of post-war prospects can be planned and realized for the benefit of each individual engaged in the production of sugarcane for sugar in Louisiana. The American Sugar Cane League is assuming the leadership to bring about the practical application of industry thinking.

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Farm Labor

By C J. Bourg

The controversy with respect to the deferment of farmers and farm labor, on which there has been considerable publicity about differences of interpretation, has been clarified in a statement made by Chairman Flannagan of the House Committee on agriculture. The statement which appears in the *Congressional Record* of February 7th on Page 934 is as follows:

Let me draw the issue.

Simply stated the issue is this: The Congress is of the opinion that the Tydings amendment is clear and unambiguous, and places upon the local draft boards only one determination, and that determination in the language of the amendment is to find out if the registrant is "necessary to or regularily engaged in an agricultural occupation or endeavor essential to the war effort." Selective Service has, in construing the Tydings amendment read into the amendment a new element, namely, comparative essentiality, and thus placed upon the local boards the duty to determine whether the registrant is more essential to the armed forces than he is to the farm, or whether the registrant is more essential to the farm than he is to the armed forces. This, in my opinion, is an unwarranted construction and a construction that the Congress never contemplated would be placed upon the amendment.

The Remedy

The House Committee on Agriculture has gone as far as it can. It has succeeded in developing the issue. It is now up to the Military Affairs Committee to work out the remedy. As a remedy I respectfully suggest that the May bill, H. R. 1752, be amended as follows:

After (7) page 5, line 21 and 22 of the May bill, which reads:

"'(7) Nothing in this subsection shall affect in any manner any of the provisions of subsection (k)' the following be added:

"'In carrying out the provisions of subsection (k) the local selective service board, in classifying the registrant, shall base its findings solely on whether the registrant is necessary to and regularly engaged in an agricultural occupation or endeavor and whether a satisfactory replacement can be obtained without reference to the relative essentiality of the registrant to an agricultural occupation or endeavor as compared with any other occupation or endeavor including service in the land or naval forces of the United States.'"

The adoption of this amendment would clear up the matter and force the Selective Service to construe the Tydings amendment as the Congress intended it should be construed.

If we have reached the point where farm boys between the ages of 18 and 25, regardless of their essentiality to the war food effort, are more essential to the armed forces, then the Congress should be so advised. If this is found to be true I am sure the Congress would immediately take appropriate action. However, the Tydings amendment is still the law of the land and until amended or repealed should be respected and observed.

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Further Studies of Methods of Controlling Alligator Weed on Sugarcane Lands.--A Progress Report

By Arceneaux, G., *Agronomist,* and Hebert, L. P., *Assistant Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture*

Results of preliminary studies previously reported have shown that infestations of alligator weed *Alternanthera philoxeroides*) may be greatly reduced by flaming back the stem growth at appropriate frequencies during the growing season.[1] Further studies during 1944 have yielded information on the application of fallow flaming and other treatments which may prove of practical value to growers in the control of this weed. While a completely adequate evaluation of control methods under investigation cannot be made at this stage, the additional information secured during 1944 is considered of sufficient interest and value to warrant publication at this time, especially in view of the present urgent need for information on practical control measures.

Fallow Flaming

In tests conducted on Ranch Plantation, near Houma, during the summer of 1943, some of the treatments tried—notably, twelve flamings at weekly intervals, and six flamings at biweekly intervals—produced marked reductions in the infestation of alligator weed.[2] The area involved was subsequently planted to sugarcane of the variety C.P. 33/409 (an unreleased variety that is included in cooperative tests on the plantation), which received routine cultivation during 1944. Table 1 gives results obtained in the plant cane crop.

It seems obvious from the data that crop yields were significantly related to density of weed infestation. The depressing effect of the weed at different levels of infestation was especially pronounced on the yield of cane per acre. The corresponding effect on average weight per stalk, although not so striking, may also be regarded as significant. Observed variations in indicated sugar content were of a relatively smaller order and did not bear a demonstrable relationship to degree of weed infestation. It is probable that observed differences are, in a large measure, due to random variability, but it may be of interest to note that the highest indicated yield of sugar per ton of cane was observed in connection with the treatment which resulted in the lowest weed infestation. (Twelve flamings at weekly intervals.)

It should be mentioned that the experimental site consists of poorly drained Sharkey Clay—an environment poorly suited to the cultivation of sugarcane, and one in which the weed thrives. The yield of 17.1 tons of cane per acre obtained were the underground weed infestation was reduced to 157 pounds per acre may be considered typical of what may be expected in such situations under favorable conditions. The stand of cane was excellent and presented very effective competition to occasional weed plants which survived the flame treatment of the previous year. The limited extent of weed growth observed during 1944

indicates that the residual infestation can probably be held in check indefinitely and perhaps further reduced through similarly effective crop competition.

TABLE 1. Relationship between alligator weed infestation as controlled by prior experimental treatment, and cane and sugar yields obtained in the Plant cane Crop.

Treatment (1943)	Pounds of roots and underground stems per acre Mar. 3, 1944	1944 Plant cane (33/409 harvested December 1)						
		Yield of cane per acre	Average weight per stalk	Laboratory-mill juice analyses			Indicated yield of 96° sugar	
				Brix	Suc.	Purity	Per ton of cane	Per acre
		Tons	(Pounds)					
Soybean, single lines on rows 6 feet apart plowed under on Aug. 3	10,904	7.9	0.85	17.12	14.58	85.16	190.2	1503
Fallow. (Alligator weed in competition with native vegetation)	8,031	9.0	0.84	16.88	14.49	85.84	189.8	1708
Mowed. June 24, July 7, August 1	6,434	9.2	0.88	17.12	14.64	85 51	191.4	1761
Flamed 3 times at monthly intervals during period commencing May 12	3,831	10.3	0.84	17.18	14.72	85.68	192.6	1984
Flamed 4 times at tri-weekly intervals during period commencing May 12	3,266	11.4	0.91	17.45	15.02	86.07	197.0	2246
Mowed June 24 Flamed July 7, July 13, July 20 and July 30	3,119	11.2	0.90	16.43	13.72	83.51	177.1	1984
Flamed 6 times at bi-weekly intervals during period commencing May 12	395	16.1	1.15	17.06	14.55	85.29	189.9	3057
Flamed 12 times at weekly intervals during period commencing May 12	157	17.1	1.17	17.62	15.37	87.23	202.9	3470

Treatment 7 (Six bi-weekly flamings) reduced the underground weed infestation to 395 pounds per acre. The yield of cane under such conditions was 16.1 tons per acre or only slightly less than obtained following the twelve weekly flamings. In this case, however, the surviving weed plants made rather extensive growth in competition with the cane. Crop competition of the order realized would probably not keep the weed infestation in check.

Other treatments (3-4-5 and 6) involving infrequent flaming, mowing and a combination of mowing and flaming were relatively ineffectual as eradication measures. While slight improvements in succeeding crop yields could be attributed to such treatments the weed plants survived in great numbers and grew luxuriantly in competition with the cane crop, hence, any benefit from such treatments would probably be only temporary.

Results obtained following treatments 1 (soybean turned under) and 2 (alligator weed allowed to grow in competition with native vegetation) are considered especially interesting. Soybean as commonly planted in rotation with sugarcane (one line per 6-foot row) does not compete very satisfactorily with alligator weed. The weed grows luxuriantly with relatively little interference in unshaded areas between the rows. Stems of the weed incidently buried with the legume crop will tend to further intensify the infestation by sprouting numerous shoots and eventually developing into storage organs. As the legume crop thus plowed under disintegrates, and nitrogen and other plant foods are liberated it is reasonable to assume that the weed and not the succeeding cane crop gets the "lion's share" of the benefit. Results of this experiment are definitely in agreement with this view.

"Smother Crop" Studies

It is a matter of common observation that alligator weed is very sensitive to the unfavorable effect of shading by plants capable of maintaining effective competition. The use of *Melilotus indica* for this purpose has been successfully practiced by some growers. The effectiveness of Melilotus as a "smother crop" lies in its ability to grow rapidly at levels of temperature commonly prevailing during late winter and early spring months when growth of the weed is largely inhibited. The effective cover thus established under favorable conditions of stand and growth will ordinarily result in almost complete suppression of alligator weed growth until late spring when the legume matures and dies. From then on, other means of controlling the weed growth must be resorted to.

In a search for a plant which can compete effectively with alligator weed when planted in succession with Melilotus during late spring or early summer the following were grown under observation in nursery plots at Houma: Sorghum, (Red Top, Early Orange, Shallu, Feterita, Hegari); Tift Sudan; Billion dollar grass (*Echinochloa Grus-galli*); Teosinte lion dollar grass (*Echinochloa Crus-galli*); Teosinte (*Enchlaena Mexicana*); Rhodes grass, (*Chloris cayspectabilis;* and *Sesbania macrocarpa.* Of these Tift Sudan and varieties of sorghum (Early Orange and Red Top) have indicated the most promise.

In a test at the Houma Station on well drained Yazoo Very Fine Sandy Loam, the effect of smother cropping by means of Tift Sudan in succession with *Melilotus indica* is being compared with that of standard practice consisting as previously mentioned of soybean on 6-foot rows plowed under for green manure. The experimental area showed an initial average underground infestation of 3853 pounds per acre as determined by measurements in the spring of 1944. Soybean plots were planted March 16 and plowed under July 29. Melilotus planted during January 1944 reached maturity in early May.

Because of the capacity of alligator weed for rapid growth at favorable temperatures any attempt to establish an effective cover with seedling plants in heavily infested areas during late spring or summer presents an extremely difficult problem. For that reason plots on which Tift Sudan was to follow Melilotus were flamed in an attempt to favor the cover plant by prior weakening of the weed. In one series, plots were flamed once and in another, three times at weekly intervals following which the area was flush plowed and later disked. Tift Sudan was subsequently drilled in lines 6 inches apart. On plots where only one flaming had been applied numerous weed plants sprouted alongside the Sudan grass and although eventually overgrown by the Sudan grass many of the weed plants survived and managed to make considerable growth in spots sufficiently exposed to sunlight. On plots flamed 3 times following the Melilotus crop plants of Tift Sudan were able to establish a pronounced lead over the weed from the very beginning and, as a result, weed growth was almost completely suppressed.

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On plots planted to soybean on 6-foot rows, the usual rank growth of alligator weed occurred over unshaded areas between rows.

Table 2 summarizes results of observations made on December 9, 1944. It will be noted that the standard practice of plowing under soybean grown on 6-foot rows resulted in more than doubling the underground weed infestation. Comparisons of results obtained with treatment 2 (Melilotus—Tift Sudan succession with one intervening flaming) and treatment 3 (Same as 2 with three intervening flamings) with results obtained from standard practice are considered extremely interesting. The 54.3% decrease in underground infestation obtained with treatment 3 represents substantial progress in bringing the weed under practical control. The significance of the 33% *increase* observed in connection with treatment 2 cannot be accurately appraised at this time. Results of previous experiments have shown that underground infestation of the weed normally decreases during winter months as a result of rotting out of some of the roots and buried stems. Therefore the net effects of the various treatments cannot be measured until spring of 1945. As mentioned in a previous report, underground storage organs whose

TABLE 2. Changes in underground infestation of alligator weed as related to treatments during the non-cane period of the customary rotation. Experimental site: Cut A-7, Houma Station consisting of Yazoo Very Fine Sandy Loam showing an average initial underground infestation of 3853 pounds per acre.

Treatment (1944)	Increase (+) or decrease (—) in underground infestation between March 29, and December 9, 1944	Soluble solids in juice expressed from root samples taken December 9, 1944 (Brix by refractometer)
	Percent	Percent
(1) Soybean, 2 lines per 6-ft. row, planted March 16 turned under July 29 (Standard practice)-----	+126.1	15.21
(2) **Melilotus indica** Jan. 17-May 30 Flamed May 30; Flush plowed May 30, disked June 15; Tift Sudan June 17-Oct. 16; **Melilotus indica** Oct. 16---------	+ 33.0	12.42
(3) **Melilotus indica,** Jan. 17-May 2; Flamed May 2, May 9, May 16; Flush plowed May 30; Disked June 15; Tift Sudan June 17-Oct. 16; **Melilotus indica,** Oct. 16--------	— 54.3	11.32

food reserves had been lowered by experimental treatments during summer months showed a greater mortality during winter months than those from plants having received normal treatment.[3] In view of observed differences in concentration of solutes in juice expressed from root samples taken from plots of different treatment series on December 9 (table 2) it is possible that winter mortality may further change infestation relationships between plots of the different series. Judging from past results, a greater rate of winter mortality may be expected in plots of series 2 and 3 than in plots of series 1.

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Soybean as a "Smother Crop"

As pointed out above soybean as ordinarily grown in succession with sugarcane does not give satisfactory competition to alligator weed. In tests of "smother crop" for spring planting made on Little Texas Plantation, near Napoleonville, soybean planted in the customary manner (a single line per 6-foot ridge) was compared with soybean drilled in lines 6 inches apart on a flat surface over an area consisting of Sharkey Clay infested with alligator weed. In the latter case an effective cover was established at a relatively early date in the spring and the growth of alligator weed was almost entirely suppressed. The usual luxuriant growth of the weed occurred on comparable plots where single-line plantings of soybean were made on 6-foot rows. The experimental area showed an initial average underground weed infestation of 6390 pounds per acre on the basis of excavations made on March 20, 1944. Corresponding determinations made on December 18, 1944 indicated no significant changes in the underground infestation of plots of the standard practice series (soybean planted in single lines on 6-foot rows and plowed under for green manure). It is considered of notable interest that in the case of plots where the soybean had been drilled in lines 6 inches apart and the entire growth removed for hay, the underground infestation had decreased to approximately 43% of the initial density.

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Discussions of Results

As mentioned in a previous report alligator weed apparently does not produce viable seed under our

conditions.[4] This not only tends to simplify the problem of eradication but in addition will help to prevent re-infestation of cleared areas. Results of field experiments during 1943 and 1944 suggest two promising approaches to the problem of controlling this weed pest, viz: (1) Fallow flaming and (2) Smother cropping. In a sense both of these are directed toward the same end i.e., eradication or decimation of the underground storage system through starvation.

Under conditions of effective foliage-cover maintained by competitive plants, stem and leaf development of alligator weed can be largely inhibited. In the absence of photosynthesis it is to be expected that growth of roots will likewise be suppressed. Ageing and decay of old roots and fleshy underground stems will naturally occur in the course of time.

When stem growth is repeatedly destroyed by flaming at appropriate intervals, not only is photosynthesis greatly curtailed but, in addition, as evidenced by reduction in soluble solids in the juice, underground storage organs are depleted of their stored food supply because of the development of new growth between flamings. In tests conducted at Houma during 1943 the percentage of soluble solids in expressed juice, as determined by refractometer, dropped from 11.0% to 3.0% in the course of bi-weekly flaming back of stem growth from April 26 to September 11. Most of the roots in the latter condition rotted out during winter months.

For reasons of economy "smother cropping" presents obviously interesting possibilities. Biological control when effective is quite generally our most advantageous means of fighting crop pests of all sorts. In considering the practical application of "smother cropping" in combatting alligator weed, we should bear in mind certain important principles of field ecology viz:

1. A crop plant will have to enjoy some specific growth advantage in order to satisfactorily suppress a competitive weed. Ordinarily the more one-sided such an advantage is, the more complete will be the dominance of the crop over the weed. In planning our program of smother cropping we should not overlook any factor which will tend to throw the balance in favor of the crop plant.

2. Suppression of the weed growth should be as complete as possible throughout the year. Most noxious weeds, because of their great vigor, will quickly recover from temporary injury if given the opportunity. For that reason, advantages derived from "smother cropping" over a period insufficiently long to achieve eradication may be largely or entirely lost if the weed is subsequently permitted to grow unmolested even for a short period of time.

3. In disposing of the growth from a cover crop such as soybean grown in weed-infested areas, due regard should be given to the effect of prevailing practices on weed-spread. In such cases the net effect of green manuring intended for soil improvement may in reality turn out to be essentially a measure of fertilizing the weed and promoting its spread.

Because of its ability to thrive at temperatures ordinarily prevailing in southern Louisiana during winter and early spring *Melilotus indica* will usually be at a decided competitive advantage in relation to alligator weed and, under satisfactory growth conditions, may be expected to dominate the situation until about May 1. From then until late summer the most effective competitors of the weed will be plants capable of germinating promptly at prevailing temperatures, making rapid and extensive growth, and developing a foliage cover sufficiently dense to shade out the weed.

Shoots of alligator weed sprouting at that time may ordinarily be expected to give severe competition to incipient seedlings of other plants. Results obtained in studies at the Houma Station (table 2) indicate that prior flaming of the weed may prove a useful means of throwing the competitive advantage in favor of the other plants.

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It should be mentioned that utilization of Melilotus as a "smother crop" is practicable only under favorable growing conditions. Results obtained in immediate succession with sugarcane have been, on the whole, disappointing. Therefore previously mentioned results obtained by close planting soybean in drills during early spring are considered worthy of note.

The one big advantage of soybean in competition with alligator weed lies in the former's ability to make satisfactory growth within a range of temperature at which growth of the weed will be largely if not entirely suppressed. It would seem from our observation that such a condition is presented by day-time temperatures prevailing in southern Louisiana during March and early April. It will be necessary to exploit to the fullest the differential in temperature requirement between the two plants in order to get the maximum value out of soybean as a "smother crop". Accordingly plantings of soybean for this purpose should be made quite early even at the risk of occasional frost damage. The incidental suppression of crab grass and other annual weeds to be expected from the increased effectiveness of the cover-crop may prove an important additional advantage.

In areas heavily infested with alligator weed it is recommended that the soybean crop be cut for hay instead of being turned under as green manure. In such cases the hay crop should be removed during the latter part of July and the land promptly prepared for planting of cane which should follow as soon as circumstances permit—preferably during early August. The sugarcane variety used should be vigorous and capable of effective shading. Cultivation should be done during late summer and fall to prevent undue weed development.

We should not overlook the fact that cultivation of cane is one form of "smother cropping". In selecting varieties for weed infested areas, due weight should be given to vigor, shading capacity and stubbling qualities. It is likewise important to provide against gappy stands by planting generous quantities of sound seed.

In limited tests so far conducted fallow flaming at frequent intervals during the growing season proved an exceedingly effective method of controlling alligator weed. The practical usefulness of this method will depend on the cost. Experimental flame treatments during 1944 were applied by means of a device designed for flaming rank weed growth along railroad tracks. It is believed that fallow flaming at relatively frequent intervals for the purpose of eradication will necessitate a somewhat different type of equipment for best results. As reported by Farwell,[5] implement manufacturers have this particular point under consideration and it is probable that fallow flaming devices of an improved type will be on trial in Louisiana during 1945.

It is believed that fallow flaming may find an important application in situations where conditions are such that crop plants cannot present effective competition to alligator weed. The site of the previously mentioned experiment on Ranch Plantation (table 1) apparently presents such a situation. There, the lack of adequate drainage results in growth conditions so completely in favor of the weed that effective competition from crop plants under conditions of heavy weed infestation seems to be out of the question. On plots of this experiment where better than 98% eradication was accomplished through fallow flaming, not only was it possible for the succeeding cane crop to keep the residual infestation under satisfactory control, but the gain in yield of cane per acre attributable to the observed reduction in infestation was such as to justify a substantial outlay for the treatment.

Incipient infestations of alligator weed are commonly limited to relatively narrow fringes along field ditches. Under such conditions control of the weed through crop competition is rendered extremely difficult for two reasons, viz: (1) the physical condition of the soil is ordinarily such as to render the preparation of a satisfactory seed bed for crop plants extremely difficult, (2) the presence of the adjacent ditch renders effective shading of the area by crop plants a difficult problem. In such cases it is considered likely that fallow flaming will find advantageous application. The logical time for such treatment would be during the soybean year. The legume should be omitted from infested areas on either side of the ditch, and these flamed at appropriate intervals during summer months. The problem of weeding the ditch can be incidentally taken care of. During early August the area in question (one to 3 rows on either side of the ditch) should be planted to some vigorous sugarcane variety of satisfactory shading habits such as C.P. 34/120. The remainder of the cut may be planted either at the same time or during the fall, with the same or with a different variety, as circumstances may require. Following satisfactory flaming operations, the

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clean condition of the ditch bank should permit preparation of a very satisfactory seed bed. Effectiveness of crop competition will be greatly enhanced by reason of the greatly weakened condition of surviving weed plants. It goes without saying that border rows established following such a treatment should be placed as close to adjacent ditches as practical considerations will permit. Unshaded spots within crop areas will present a weed problem under almost any condition, but the problem will be greatly intensified by the presence of a perennial plant such as alligator weed.

Summary

Fallow flaming at appropriate intervals has shown considerable promise as a means of controlling alligator weeds. Twelve flamings at weekly intervals gave better than 98% control. Plots receiving this treatment produced, during the succeeding year, a normal crop of sugarcane which very satisfactorily suppressed the residual infestation. Six flamings at bi-weekly intervals reduced the infestation to a point permitting satisfactory cane production but crop competition was not sufficiently effective to keep the residual infestation in complete check.

Infrequent flaming, mowing, and combinations of flaming and mowing, while giving significant reductions in underground weed infestation did not effect satisfactory control.

Extremely unfavorable results in point of weed spread and cane production were obtained from the currently standard practice of plowing under soybean grown in single lines on 6-foot rows in areas infested with alligator weed.

Tift Sudan proved a satisfactory "smother crop" in succession with *Melilotus indica* where alligator weed was flamed 3 times at weekly intervals after the Melilotus had matured. One flaming prior to planting of Tift Sudan did not weaken the weed sufficiently to permit entirely satisfactory suppression by the cover crop.

Soybean drilled in lines 6 inches apart during early spring proved a highly effective "smother crop" in competition with alligator weed.

[1] Arceneaux, G., and Hebert, L. P. Fallow flaming promising as a means of controlling alligator weed on sugarcane lands. Sugar Bulletin 22 (16): 121-23, May 15, 1944.
[2] See footnote 1.
[3] See footnote 1.
[4] Arceneaux, G., and Hebert, L. P. Preliminary studies of periodic flaming as a means of controlling Johnson grass and alligator weed on sugarcane lands. Sug. Bull. 22, No. 3, pp 21-23, Nov. 1, 1943.
[5] Farwell, Evans. Flame cultivation and flame eradication. Sug. Bull. 23, No. 2, pp. 12-13, Oct. 15, 1944.

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1945 Cane Price Prospects

By C J. Bourg

The price support program of the Commodity Credit Corporation on the 1945 sugarcane was announced in August 1944, just ahead of planting time. The CCC announcement as printed in the September 1st issue of the *Sugar Bulletin* stated: "Under the support price program for the 1945 Louisiana sugarcane crop, growers will receive a payment of about $1.60 per ton of sugarcane of the average quality of recent years or $1.53 per ton of standard cane."

As was the case with last year's program, the 1945 price support program will be adjusted to provide for full payment on frozen cane, used either for sugar or molasses, in order to aid growers in clearing fields promptly and thus insure greater sugar and molasses production in 1945 and succeeding years.

The price support programs, like the Sugar Act conditional payment, are contingent upon the annual appropriation by Congress.

In due course of Government procedure, the written offer of CCC will be mailed to all processors to provide for payments to the grower through the processor to whom he delivers cane. The arrangement through the processor has the advantage for the grower of receiving the incentive payment as part of the purchase price for the cane, with settlements each week from the sugarhouse.

As the time for working the crop and applying fertilizer is here and the grower is figuring on how to save all of his stubble, he will be interested in studying the *estimates* of the money returns on sugarcane in 1945:

$3.862	from processor on sugar value
.32	from processor on molasses value.
1.53	through processor, incentive payment from CCC
$5.71	
1.30	conditional payment under Sugar Act
$7.01	total estimated returns, per standard ton

Sugar for Home Canning

The Office of Price Administration has announced a sharp cut in the amount of sugar which may be used for home canning in 1945. It provides a tightening up of the procedure for obtaining per capita allotments.

In view of the limited supplies of refined sugar available for prompt distribution and in view of the fact that refiners are weeks behind in their deliveries, this new order is being accepted as one of the necessary restrictions of wartime. In fact, the rather loose and over-generous procedure of 1944 contributed largely to the situation which made necessary the present tightening up.

Each local War Price and Rationing Board will require that the home canners present their applications "on the basis of actual need." In no event will a single family be allowed more than 160 lbs. for home canning although each person in the family is entitled to 20 lbs. Last year, the individual allowance was 25 lbs. and the family maximum was 250 lbs,

THE
SUGAR BULLETIN

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MARCEL J. VOORHIES, Editor

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The following are some of the rules for home canners in 1945:

1. OPA will provide application forms "containing helpful suggestion to aid the housewife in estimating her needs".

2. No ration stamps in War Ration Book 4 will be good for canning sugar this year. Local boards will issue sugar coupons for five pounds and also one-pound packages.

3. For canning fruits or fruit juices, the allowance will be on the basis of one pound of sugar for each four quarts to be canned. Only five pounds of sugar for each person named in the family application may be allowed for canning vegetables and for making jams, jellies, relishes, catsup, etc.

4. Applications will not be accepted after October 31.

5 In no case will more than two applications be accepted from any family, so needs should be estimated carefully in advance.

6. The application form may be mailed or delivered in person and must be accompanied by Spare Stamp 13 for each member of the family covered in the application. This stamp is merely evidence that each person named in the application is a holder of Book 4.

Sugar Processing Machinery

Referring to the January 15th issue of *The Sugar Bulletin*, at Page 61 an amendment to L-292 was printed. This amendment became effective January 6, 1945.

The attention of processors should be directed to the following section of L-292:

"(*b*) *Rated orders not required.* This order now permits deliveries of food processing machinery and equipment to fill unrated orders. If a rating is needed, the purchaser should file Form WPB-541, or Form FEA-419 for export other than to Canada (when appropriate), or Form WPB-617 when permission under Order L-41 is needed."

An explanation is in order. Food processing machinery and equipment needed by the Armed Forces are given rated orders above civilian needs; however, in the case of "sugar processing machinery and equipment", this is specialized for use in sugar manufacture and seldom is the subject of an order from the Armed Forces. Therefore, manufacturers of sugar processing machinery and equipment ordinarily can fill unrated orders. Processors who submit their orders well in advance of a required delivery date will probably need no rating.

Prior to the issuance of the amendment of January 6, 1945, L-292 required that no manufacturer could deliver equipment except on an order rated AA-5 or better. This restriction on the delivery of food processing equipment has been removed.

WMC List of Essential Activities

The War Manpower Commission announced on January 13, 1945 a list of "essential" activities in the war effort. Certan of these essential activities are specially listed in bold type as "critical". Among the few critical activities in agriculture are the processing of *Sugar, Meat, Dairy Products and Eggs.* The effect of list *Sugar* among the critical activities is to give priority on manpower and for consideration by the Selective Service System.

Deferments of Farmers and Farm Workers

There has been uncertainty and confusion regarding Selective Service regulations affecting the draft of farmers and agricultural workers. In early January, the impression was given that all deferments granted to registrants from 18 to 26 years of age engaged in agriculture would be withdrawn arbitrarily. This brought about great concern as to the effect upon the war food production program.

The Tydings Amendment to the Selective Service Act provides specifically that deferment shall be granted by the Local Draft Board in each case where it is established that the registrant is

(1) Regularly employed or engaged in farming;
(2) That the products of the farm are essential to the war effort;
(3) That the work of the registrant is essential to the operation of the farm; and
(4) That there is no replacement available.

At the request of the House Committee on Agriculture, General Lewis B. Hershey, Director of Selective Service, has dispatched the following telegram to each State Director of Selective Service which definitely clarifies the fact that the discretion with respect to each individual deferment rests exclusively with the Local Draft Board:

"Questions of interpretations of State Directors Advice No. 288 have been brought to my attention by Members of Congress and by others.

"The Directive of January 3, 1945, SDA 288, did not change or modify in any manner the Tydings Amendment. The opinions and findings contained in SDA 288 were for the consideration of the local boards in determining the classifications of registrants in the age group 18 through 25.

"Section 5-K of the Selective Service Training and Service Act, known as the Tydings Amendment, places upon each local board the responsibility to determine subject to appeal in the case of the individual registrant, whether or not the registrant meets the requirements prescribed by this section. Notify all local boards immediately."

Louisiana (Mill Reports) Production of Sugars, Syrup, Molasses and Tons of Cane Ground

1944 Crop

Official AAA Report

Raw Sugar, 96°, tons	**259,324**
Clarified (Plantation granulated and crystals), raw value	**19,892**
Turbinados, raw value	**40,405**
Granulated, raw value	**46,924**
Washed raws, raw value	**0**
String, others, raw value	**2,834**
Total sugars, raw value	**369,379**
Syrup, gallons	**2,684,925**
1st molasses, gallons	**3,661,082**
2nd molasses, gallons	**3,260,918**
Blackstrap, gallons	**28,716,392**
Tons of cane ground	**4,928,686**

NADLER FOUNDRY & MACHINE CO.,
Manufacturers and Repairers
of
SUGAR MACHINERY
PLAQUEMINE, LA.

Retail Prices of Fertilizers and Materials

(*2nd Revised M.P.R. 135 OPA*)

The following schedules J and K of M.P.R. 135 (revised) deal with fertilizer prices in Louisiana:

Schedule J—For Consumers Located in Mississippi and Louisiana (East of the Mississippi River)

I. *Mixed fertilizers, superphosphate and potash.* (a) Delivered to railhead or warehouse base prices for goods in 100-pound paper bags:

Grade:	*Price per ton*
12-8-0	$42.50
10-6-4	39.40
10-0-10	37.90
*9-6-9	40.90
8-8-8	40.10
6-9-6	35.70
6-8-8	36.10
6-8-4	33.30
5-10-5	33.40
4-16-0	33.10
4-12-8	34.90
4-12-4	32.10
4-8-8	$31.10
3-12-12	35.20
0-14-7	26.70
0-12-12	28.30
0-20-0	22.20
0-19-0	21.50
0-18-0	20.70
0-0-60 muriate of potash	50.00
0-0-50 muriate of potash	44.70
0-0-52 sulphate of potash	57.80
0-0-50 sulphate of potash	56.20
0-0-48 sulphate of potash	54.60
0-0-30 manure salts	32.00
0-0-25 manure salts	30.80
0-0-21.5 sulphate of potash magnesia	44.70

(*Item amended by Am. 2, effective 11-28-44.)

(b) *Terms.* (1) The base price, after making the appropriate additions and deductions provided for in the general provisions of this appendix, is the price for sales sight draft, SD/BL, c.o.d., cash in advance or cash within 10 days after delivery.

(2) To determine the time prices, add 10% to the cash prices. Interest may be charged from May 1 on spring shipments and from December 1 on fall shipments at the rates per annum of 6% in Mississippi and 8% in Louisiana.

(c) *Delivery.* (1) When delivery is taken at a factory, whether or not such factory is located in the area covered in Schedule J, deduct the following amounts from the cash or time prices from the shortest highway mileage from factory to railhead or dealer's warehouse nearest consumer's premises:

$0.75 per ton for distances up to 15 miles.
$1.00 per ton for distances between 15 and 25 miles.
$1.50 per ton for distances between 25 and 40 miles.
For distances over 40 miles, $1.50 per ton plus 1 cent per ton per mile in excess of 40 miles.

(2) For less than carload shipments to consumer's nearest railhead, an additional charge may be made equal to the transportation cost in excess of the carload rate.

II. *Nitrogenous fertilizer materials.* (a) Cash (pay-

ment within 10 days after delivery) prices per ton for nitrogenous fertilizer materials in bags shall be:

(1) F. o. b. the nearest wholesale price basing point as specified:

16-0-0 imported nitrate of soda $37.00 f.o.b. nearest port.
16-0-0 domestic nitrate of soda $34.00 f.o.b. Hopewell, Virginia.
14-0-0 domestic nitrate of soda, $30.00 f.o.b. Holston, Tenn.
14-0-14 nitrate of soda-potash, $46.00 f.o.b. nearest port
20.5-0-0 sulphate of ammonia, $36.20 f.o.b. nearest port or $35.20 f.o.b. nearest producing point, whichever results in the lowest delivered price.
20.5-0-0 ammonium nitrate-lime compound $36.50 f.o.b. Hopewell, Virginia.
20.6-0-0 calcium cyanamide, $42.25 f.o.b. Niagara Falls, Ontario, Canada.
32.5-0-0 ammonium nitrate, $55.00 f.o.b. nearest producing point.
42-0-0 urea compound, $66.40 f.o.b. nearest port.

(2) Plus the cost of tax tags and the attaching thereof.

(3) Plus the transportation cost from the wholesale price basing point to the point at which the consumer takes delivery.

(4) Plus one charge of 50 cents per ton in the case of a manufacturer or dealer making delivery to a consumer of materials handled through his factory or warehouse.

(b) To determine the time price, add 10 per cent to the cash price. Interest may be charged from May 1 on spring shipments and from December 1 on fall shipments at the rate per annum of 6 per cent in Mississippi and 8 per cent in Louisiana.

(Part II amended by Am. 2, effective 11-28-44.)

Schedule K—For Consumers Located in Louisiana (West of the Mississippi River), Arkansas, Texas, New Mexico and Oklahoma (except Counties of Cimarron, Texas, Beaver, Harper, Woods, Alfalfa, Grant, Kay, Osage, Washington, Nowata, Craig, Ottawa and Delaware. These Counties Take Kansas Prices and Terms in Schedule N)

1. *Mixed fertilizer, superphosphate and potash.* (a) Delivered to railhead or warehouse base prices for goods in 100-pound paper bags.

Column I. Consumers in Louisiana (west of the Mississippi River), Arkansas, Oklahoma, (except counties of Cimarron, Texas, Beaver, Harper, Woods, Alfalfa, Grant, Kay, Osage, Washington, Nowata, Craig, Ottawa and Delaware), eastern Texas.

Grade	*Price per ton* I
12-15-0	$52.40
12-8-0	43.00
*12-0-12	46.40
10-20-0	53.40
10-10-0	40.80
10-6-4	41.00
10-0-10	40.80
9-6-9	42.60
8-8-8	41.40
6-30-0	55.40
6-12-0	34.40
6-9-6	36.60
6-8-12	40.40
6-8-8	37.40
6-8-4	34.40
5-10-5	34.60
4-16-0	33.40
4-12-8	36.40
4-12-4	33.40
4-12-0	30.40
4-10-0	28.80
4-8-8	33.40
3-12-12	37.40
3-12-6	32.90
3-9-18	39.60
2-12-6	30.80
0-14-7	29.20
0-12-12	31.40
0-10-20	35.80
0-45-0	54.80
0-20-0	25.80
0-19-0	25.40
0-18-0	24.80
0-0-60 muriate of potash	51.20
0-0-50 muriate of potash	45.80
0-0-52 sulphate of potash	59.00
0-0-50 sulphate of potash	57.40
0-0-48 sulphate of potash	55.80
0-0-21.5 sulphate of potash-magnesia	45.80
0-0-30 manure salts	32.00
0-0-25 manure salts	30.80
0-0-22 manure salts	27.80

(*—Item added by Am. 2, effective 11-28-44.)

(b) *Terms.* (1) The base price, after making appropriate additions and deductions provided for in the general provisions of this appendix, is the price for sales sight draft, SD/BL, c. o. d., cash in advance or cash within 10 days after delivery.

(2) To determine the time prices, add 11 per cent to the cash prices. Interest may be charged from December 1 on fall shipments and from May 1 on spring shipments at the rate of 8 per cent per annum (10 per cent per annum after maturity in Oklahoma, Texas and New Mexico only).

(Subparagraph (2) amended by Am. 2, effective 11-28-44.)

(c) *Delivery.* (1) When delivery is taken at a factory, whether or not such factory is located in the area covered in Schedule K, deduct the following amounts from the cash or time prices for the shortest highway mileage from factory to railhead or dealer's warehouse nearest consumer's premises:

$0.75 per ton for distances up to 15 miles.
$1.00 per ton for distances between 15 and 25 miles.
$1.50 per ton for distances between 25 and 40 miles.

For distances over 40 miles, $1.50 per ton plus 1 cent per ton per mile in excess of 40.

(2) For less than carload shipments to consumer's nearest railhead, an additional charge may be made equal to the transportation cost in excess of the carload rate.

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II. *Nitrogenous fertilizer materials.* (a) Cash (payment within 10 days after delivery) prices per ton for nitrogenous fertilizer materials in bags shall be:

(1) F. o. b. the nearest wholesale price basing point as specified:

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16-0-0 domestic nitrate of soda, $34.00 f.o.b. Hopewell, Virginia
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14-0-14 nitrate of soda-potash, $46.00 f.o.b. nearest port.
20.5-0-0 sulphate of ammonia, $36.20 f.o.b. nearest port or $35.20 f.o.b. nearest producing point, whichever results in the lowest delivered price.
20.5-0-0 ammonium nitrate-lime-compound, $36.50 f.o.b. Hopewell, Virginia.
20.6-0-0 calcium cyanamide, $42.25 f.o.b. Niagara Falls, Ontario, Canada.
32.5-0-0 ammonium nitrate, $55.00 f.o.b. nearest producing point.
42-0-0 urea compound, $66.40 f.o.b. nearest port.

(2) Plus the cost of tax tags and the attaching thereof.

(3) Plus the transportation cost from the wholesale price basing point to the point at which the consumer takes delivery.

(4) Plus one charge of 50 cents per ton in the case of a manufacturer or dealer making delivery to a consumer of materials handled through his factory or warehouse.

(b) To determine the time price, add 11 per cent to the cash price. Interest may be charged at rates and from dates ar specified in I (b) (2) above.

(Part II amended by Am. 2, effective 11-28-44.)

Sugar Statistics for Calendar Year 1944

War Food Administration

Distribution of sugar by the four types of primary distributors during 1944 as compared with that during the previous 4-years was as follows:

	1944	1943	1942	1941	1940
		(short tons, raw value)			
Cane sugar refiners:					
Refined sugar	5,607,086	4,621,179	3,424,582	5,518 103	4,718,846
Raw sugar	9,875	15,196	5,587	8,573	7,779
Beet Sugar Processors	1,156,309	1,525,735	1,703,140	1,952,597	1,551,518
Importers of direct-consumption sugar	522,931	515,640	466,596	564,044	693,917
Continental cane mills (direct-consumption sugar)	164,968	123,817	74,854	96,478	96,872
Total	7,461,169	6,801,567	5,674,759	8,139,795	7,068,932
Exports[1]	313,460	466,854	208,555	70,338	178,264
Distribution for consumption in U. S.	7,147,709	6,334,713	5,466,204	8,069,457	6,890,668

[1] Actual exports for 1940 and 1941; for subsequent years, deliveries for export by primary distributors.

In the above table, the deliveries of refined sugar sugar have been converted to short tons, raw value, by applying the factor 1.07, except in the case of cane sugar refiners. Deliveries of refined sugar by refiners are converted to raw value by using the factor, 1.068271 for 1944; 1.063308 for 1943; 1.063829 for 1942; 1.063030 for 1941 and 1.061725 for 1940; These factors represent the relationship between meltings of raw sugar and production of refined sugar during the 2-year periods 1942-43, 1941-42, 1940-41, 1939-40 and 1938-39, respectively.

Deliveries of sugar for local consumption in the Territory of Hawaii during the calendar year 1944 amounted to 78,181 short tons, raw value, as compared with 62,509 tons in 1943, 47,404 tons in 1942, 36,618 tons in 1941 and 32,965 tons in 1940. In Puerto Rico, 1944 deliveries totaled 99,503 short tons, raw value, as compared with 97,177 tons in 1943, 84,544 tons in 1942, 78,027 tons in 1941 and 68,706 tons in 1940.

Stocks of sugar in the hands of primary distributors on December 31, 1944 are shown in the following table together with the corresponding figures for the previous 4-years:

	1944	1943	1942	1941	1940
		(short tons, raw value)			
Refiners' stocks of raws	330,573	471,139	359,815	425,575	337,362
Refiners' stocks of refined	63,078	238,709	270,605	236,746	271,268
Beet factories' stocks of refined	747,739	838,497	1,292,728	1,318,517	1,601,620
Importers' stocks of direct-consumption sugar	7,705	61,832	78,689	56,496	39,178
Mainland cane mills	77,379	141,171	134,393	80,227	60,214
Total stocks*	1,226,474	1,751,348	2,136,230	2,117,561	2,309,642

* Excluding raws for processing held by importers other than refiners, which amounted to 14,988 short tons, raw value in 1943; 1,186 tons in 1942; 31,078 tons in 1941 and 46,614 tons, in 1940; (none in 1944).

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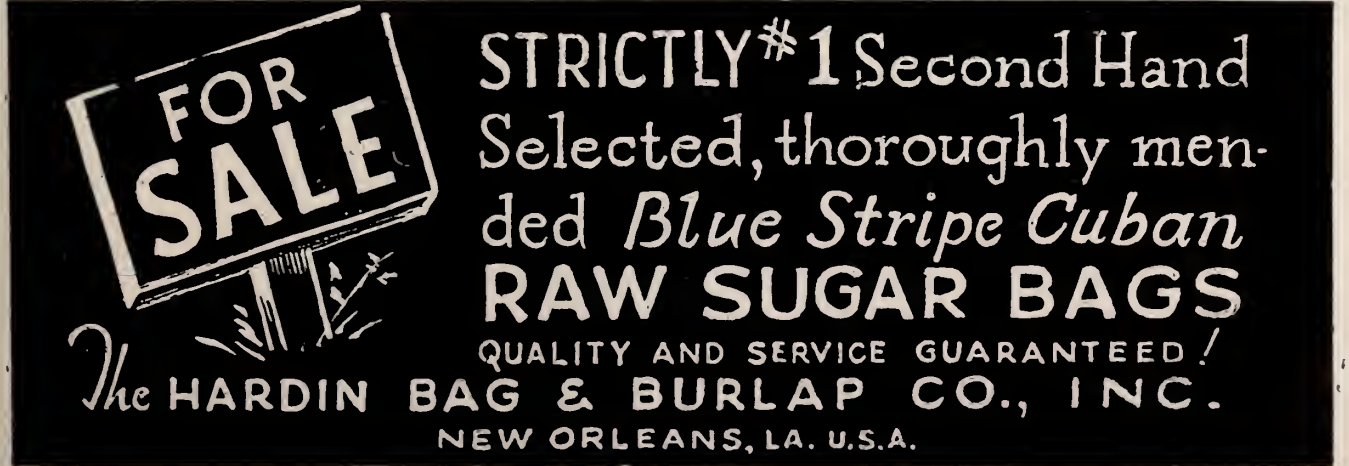
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MANARD MOLASSES CO., INC.
P. O. Box 607 New Orleans 7, La.

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New Orleans, La.

PENICK & FORD LTD., INCORPORATED
Canal Bank Building, New Orleans, La.

E. A. RAINOLD, INC.
456 Marine Building, New Orleans 12, La.

STANDARD OIL CO. OF LOUISIANA
P. O. Box 1250 New Orleans, La.

STANDARD SUPPLY & HARDWARE CO., INC.
823 Tchoupitoulas Street, New Orleans, La.

STATE AGRICULTURAL CREDIT CORP., INC.
837 Whitney Building, New Orleans, La.

THORNTON GRAB & DERRICK WORKS, INC.
Jeanerette, La.

WHITNEY NATIONAL BANK
New Orleans, La.

TABLE 1

Raw sugar: Refiners' stocks, receipts, meltings, and deliveries for direct consumption, January-December, 1944

(short tons, raw value)

Source of Supply	Stocks on January 1, 1944	Receipts	Meltings	Deliveries for direct consumption	Lost by fire, etc.	Stocks on Dec. 31, 1944
Cuba	242,117	3,419,718	3,506,303	4,400	261	150,871
Hawaii	80,408	801,721	805,114	915		76,100
Puerto Rico	39,592	667,370	682,065	3,119	3	21,775
Philippines	167	0	83			84
Continental Raws	98,103	346,605	363,832	1,441	17	79,418
Virgin Islands	0	2,694	2,694			0
Other countries	10,752	105,552	114,057			2,247
Miscellaneous (sweepings, etc.)	0	10,188	10,109		1	78
Total	471,139	5,353,848	5,484,257	9,875	282	330,573

Compiled from reports submitted by sugar refiners on Form SS-15A.

TABLE 2

Stocks, Production, and Deliveries of Cane and Beet Sugar by United States Refiners and Processors, January-December, 1944

(short tons, raw value)

	Refiners[1]	Domestic beet factories
Initial stocks of refined, January 1, 1944	238,709	838,497
Production	5,431,455	1,065,551
Deliveries	5,607,086	1,156,309[2]
Final stocks of refined, December 31, 1944	63,078	747,739

Compiled from reports submitted on Forms SS-16A and SS-11C by the sugar refiners and beet sugar factories.

[1] The refineries figures are converted to raw value by using the factor 1.068271 which is the ratio of meltings of raw sugar to refined sugar produced during the years 1942 and 1943.

[2] Larger than actual deliveries by a small amount representing losses in reprocessing, etc.

TABLE 3

Stocks, receipts, and deliveries of direct-consumption sugar, from specified areas, January-December, 1944

(short tons, raw value)

Source of Supply	Stocks on Jan. 1, 1944	Receipts	Deliveries or usage	Stocks on Dec. 31, 1944
Cuba	50,112	392,246	434,653	7,705
Hawaii	0	0	0	0
Puerto Rico	11,720	75,933	87,653	0
Other foreign areas	0	625	625	0
Total	61,832	468,804	522,931	7,705

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Form SS-15B and SS-3.

TABLE 4

Mainland Cane Mills' Stocks, Production and Deliveries, January-December, 1944

(short tons, raw value)

Stocks on Jan. 1, 1944	Production	Deliveries: For direct consumption	Deliveries: For further processing	Stocks on Dec. 31, 1944
141,171	446,603	164,968	345,427	77,379

TABLE 5

Distribution of Sugar for Local Consumption in the Territory of Hawaii and Puerto Rico, January-December, 1944

(short tons, raw value)

Territory of Hawaii	78,181
Puerto Rico	99,503

Castagnos Cane Loader Co.

IMPROVED CASTAGNOS CANE LOADER MOUNTED ON PNEUMATIC STEEL WHEELS

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The Sugar Bulletin, February 15, 1942.

ALORCO CRYOLITE—Use undiluted for dusting—8 to 10 pounds per acre. Apply four times, at weekly intervals, beginning with the hatching of eggs laid by moths emerging from over-wintered borers. Can be depended upon to kill 90% or more of first generation borers in the spring.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

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We stand for the encouragement of Home Industries as against foreign Competition

Vol. 23 NEW ORLEANS, LA., MARCH 15, 1945 No. 12

Maximum Price Regulation No. 16—Raw Cane Sugar

(*Office of Price Administration*)

(Document No. 42898)

PART 1334—SUGAR

(MPR 16)

RAW CANE SUGARS

Revised Price Schedule No. 16 is redesignated Maximum Price Regulation 16 and is revised and amended to read as follows:

A statement of the considerations involved in the issuance of this regulation, issued simultaneously herewith, has been filed with the Division of the Federal Register.*

Such specifications and standards as are used in this regulation were, prior to such use, in general use in the trade or industry affected.

Sec.

1. Maximum prices for raw cane sugars established with prohibition of sales in violation.
2. Less than maximum prices.
3. Records.
4. Enforcement.
5. Licensing.
6. Petitions for amendment.
7. Definitions.
8. Maximum prices for raw cane sugars.
9. Evasion.
10. Maximum prices as to transactions of the Commodity Credit Corporation.
11. Export maximum prices.
12. Adjustable pricing.

AUTHORITY: § 1334.1 issued under 56 Stat. 23, 765; 57 Stat. 566; Pub. Law 383, 78th Cong.; E. O. 9250, 7 F.R. 7871; E.O. 9328, 8 F.R. 4681.

SECTION 1. *Maximum prices for raw cane sugars established with prohibition of sales in violation.* On and after August 14, 1941, or the effective date thereof as to any amendment to this regulation, regardless of any contract or other obligation.

(a) No person shall sell, offer to sell, deliver or transfer raw cane sugar at a higher price than the maximum price established in this regulation.

(b) No person shall buy, offer to buy, import or receive in the course of trade of business raw cane sugar at a price higher than the maximum price established in this regulation.

(c) Maximum prices are established in this regulation on the gross basis specifying types and points of delivery. They include all commissions and other charges for such types up to such points. From then must be deducted any discounts customarily allowed in sales of raw cane sugar.

SEC. 2. *Less than maximum prices.* Lower prices than those set forth in section 8 may be charged, demanded, paid or offered.

SEC. 3. *Records.* Every person making purchases or sales of raw cane sugars after August 14, 1941, shall keep for inspection by the Office of Price Administration for a period of not less than one year complete and accurate records of:

(a) Each such purchase or sale, showing the date thereof, the name and address of the buyer or the

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MARCEL J. VOORHIES, Editor

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The American Cane Growers' Assn.
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seller, the price paid or received, the quantity of each kind or grade purchased or sold; and

(b) The quantity of raw cane sugars (1) On hand, and (2) On order, as of the close of each calendar month.

SEC. 4. *Enforcement.* Persons violating any provisions of this Maximum Price Regulation 16 are subject to the criminal penalties, civil enforcement actions, and suits for damages provided for by the Emergency Price Control Act of 1942, as amended.

SEC. 5. *Licensing.* The provisions of Licensing Order No. 1,[1] licensing all persons who make sales under price control, are applicable to all sellers subject to this regulation of schedule. A seller's license may be suspended for violations of the license or of one or more applicable price schedules or regulations. A person whose license is suspended may not, during the period of suspension, make any sale for which his license has been suspended.

SEC. 6. *Petitions for amendment.* Any person seeking an amendment of any provision of this Maximum Price Regulation 16 may file a petition for amendment in accordance with the provisions of Revised Procedural Regulation No. 1.[2]

SEC. 7. *Definitions.* When used in Maximum Price Regulation 16, the term:

(a) "Person" includes an individual, corporation, partnership, association or any other organized group of persons, or legal successor or representative of any of the foregoing, and includes the United States or any agency thereof, or any other government, or any of its political subdivisions, or any agency of any of the foregoing.

(b) "Raw cane sugars" means any sugars which are principally of crystalline structure and which are to be further refined or improved in quality, and any sugars which are principally not of crystalline structure but which are to be further refined or otherwise improved in quality to produce any sugars principally of crystalline structure.

SEC. 8. *Maximum prices for raw cane sugars.* (a) (1) (i) The maximum price per pound for raw cane sugars from off-shore producing areas of 96 degrees polarization, duty paid, cost, insurance and freight, shall be 3.75 cents, for delivery at points at which deliveries have customarily been made by Commodity Credit Corporation for a particular refinery, or, if such deliveries have not customarily been made by Commodity Credit Corporation, then at receiving scales located at the refinery port.

(ii) If a buyer receives delivery of off-shore sugars elsewhere than at such points, the total cost to the buyer shall not exceed the specified maximum price applicable at the point where the buyer has customarily received deliveries from Commodity Credit Corporation or, if such deliveries have not customarily been made by the Commodity Credit Corporation, at the receiving scales located at the refinery port plus an amount equal to all charges that would have been incurred in moving the sugar over the customary route from such point to the buyer's refinery.

(2) Except, by contract, provision may be made for a maximum price to be:

(i) An amount which may be adjusted later, up to but not to exceed the maximum price in effect at the time of putting the raw sugar being priced by the contract into the refiner's melt, or

(ii) An average of the prices not to exceed an average of the maximum prices of raw cane sugar at the specified port of arrival which prevail during the period of the contract, or

(iii) A consideration which includes performance of services by the buyer, if the maximum prices specified above are lowered by an amount at least equal to the reasonable money value of such services to the seller; provided a copy of such contract and an explanation of the services are submitted to the Office of Price Administration, Washington, D. C., at least thirty days before the contract is to become effective. The Price Administrator may adjust the price set out in such contract by issuance of an order within thirty days after its receipt, otherwise it will be considered as complying with this regulation as to maximum prices.

(b) Maximum prices per pound for continental United States raw cane sugars of 96 degrees polarization shall be as follows:

(1) 3.75 cents per pound, f. o. b. conveyance for delivery to a refinery, less the per pound transportation charge at the published freight rate from the raw sugar mill to the refinery nearest freightwise to such raw sugar mill. The maximum delivered price to a refinery shall be the above f. o. b. price plus actual transportation cost from the selling raw sugar mill to the refinery processing such sugar.

(2) With respect to any sale of the sugars included in this paragraph (b):

(i) A contract may provide for averaging the prices during the season in accordance with the customary method: *Provided,* That (a) the average price for the season does not exceed a price obtained by averaging the maximum prices in effect during the season in accordance with such method; and (b) the season used in determining the average price commences not later than the date fixed by the United States Department of Agriculture pursuant to the Sugar Act of 1937, as amended, as the beginning of the sugarcane marketing season and terminates not later than the date fixed by the United States Department of Agriculture pursuant to said Act as the termination of said season.

(ii) A contract may provide for the payment of an adjusted price not to exceed the maximum price in effect at the time of arrival at the buyer's warehouse or place of business. In the event that more than one delivery is made pursuant to the same contract, the adjustment of the price and the payment thereof shall be made in respect to each delivery separately.

(c) Adjustment for polarization:

The maximum prices specified herein shall be adjusted by making allowances per pound for each degree of polarization above or below 96 degrees (fractions of a degree in proportion) in accordance with the method customarily used prior to August 14, 1941. It is not required that such method be used. However, the maximum prices for the various tests shall not exceed the prices obtained by applying such method of sugars of like test.

Sec. 9. *Evasion.* The price limitations established by Maximum Price Regulation 16 shall not be evaded whether by direct or indirect methods in connection with a purchase, sale, delivery or transfer of raw cane sugars, alone or in conjunction with any other commodity or material, or by way of any commission, service, transportation, or other charge, or discounts, premium, or other privilege, or by tying-agreement, or other trade understanding, or by shifting the incidence of a cost which customarily has been borne by the buyer or the seller to the other party to the contract, or by any other means.

Sec. 10. *Maximum prices as to transactions of the Commodity Credit Corporation.* (a) With respect to the purchase of raw cane sugar the Commodity Credit Corporation and sellers to it are exempted from the provisions of this regulation.

(b) For the sale of raw cane sugar by the Commodity Credit Corporation, contracts may be entered into by it and by purchasers from it to provide: (1) for forward deliveries with payment to the Commodity Credit Corporation of an adjusted price not to exceed the maximum price in effect on the day when such sugar is put into the melt in the purchaser's refinery; (2) for price adjustments on sugars other than that directly supplied by the Commodity Credit Corporation and providing for payment for them at a price not to exceed the maximum price on the day when such sugar is put into the refiner's melt, and (3) for reciprocal services.

Sec. 11. *Export maximum prices.* Maximum prices at which a person may export raw cane sugar shall be determined in accordance with the provisions of the Second Revised Maximum Export Price Regulation, as amended.[3]

Sec. 12. *Adjustable pricing.* When a request for a change in the applicable maximum price is pending, an authorization may be given by the Price Administrator for a price to be adjusted upward after the raw sugar being priced is put into the refiners melt, if the Price Administrator deems such authorization necessary to promote distribution or production and if it will not interfere with the purposes of the Emergency Price Control Act, as amended.

Effective date. This regulation shall become effective January 8, 1945.

Note: All records keeping and reporting requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Issued this 3d day of January 1945.

Chester Bowles,
Administrator.

*Copies may be obtained from the Office of Price Administration.

[1] 9 F.R. 13240.

[2] 9 F.R. 10476.

[3] 8F.R. 4132, 5987, 7662, 9998, 15193; 9 F.R. 1036, 7201.

Results of Experiments on Fallow Flaming of Johnson Grass

By Arceneaux, G., Agronomist, and Hebert, L. P., Assistant Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

In preliminary tests during 1943 results of which have been reported[1] it was found possible to destroy Johnson grass (Sorghum halepense) by flaming back the stem growth at weekly intervals during the growing period. The resultant drain on stored nutrients caused a marked drop in percentage of solutes in juice of

rhizomes. From an initial value of 7.9 percent, the concentration of solutes in rhizome juice was reduced to 0.8 percent in 56 days by weekly flaming back of stem and foliage. Rhizomes in the latter condition quickly rotted and disintegrated.

During 1944 small-scale flame treatment tests were repeated at the Houma Station and plantation-scale experiments were conducted at 3 stations in an attempt to evaluate fallow flaming as a practical means of field-scale eradication of Johnson grass.

Table 1. Effect of flaming on percentage of solutes in juices expressed from rhizomes of Johnson grass.

Date of sampling and analysis	Duration of Treatment (Days)	Average percentage of solutes in juice from rhizomes of plants flamed at intervals of:						Rainfall during preceding period
		5 days	7 days	9 days	11 days	13 days	Check (Not flamed)	
								Inches
May-----2	0	8.50	8.80	7.57	8.82	8.37	8.25	----
May----22	20	6.35	6.22	5.57	6.27	6.97	7.35	3.22
June 12---	41	3.35	3.45	4.25	3.50	4.65	5.70	2.68
July-----1	60	2.90	2.55	3.05	2.80	3.20	7.60	1.43
July----21	80	2.32	2.03	2.25	2.66	3.00	6.13	2.75
Aug.----10	100	*	*	**	2.00	2.45	10.71	7.15
Aug.----30	120			*	*	*	6.75	7.13
Number of flamings required for eradication---------		19	14	12	11	10		

* Shoots and rhizomes dead.
** Few weak shoots surviving; rhizomes dead.

Table 1 gives results of flame treatment studies conducted at the Houma Station. Experimental methods were essentially as described in the previously mentioned report. Values given for percentage of solutes in expressed rhizome juice are based on refractometer readings. Although the rhizomes undoubtedly contain more or less insoluble reserve food material, it is believed that the percentage of soluble solids in the juice represents a reasonably reliable approximation of the available food material.

In agreement with previous results, flaming back the stem growth at each of the different frequencies tested was accompanied by a gradual drop in the concentration of solutes in rhizomes juice. Complete eradication was eventually achieved in each case. However, as contrasted with results obtained during 1943, the time required for eradication was considerably longer.

Rainfall during the first 80 days of this experiment was abnormally light. Stem growth between flamings occurred at a greatly retarded rate and it is believed that this condition contributed materially to the increased length of time required for lowering the percentage of solutes in rhizome sap to critical levels. This may also account for the relative inefficiency of flaming at 5- and 7-day intervals as compared with flaming at longer intervals.

In this experiment 14 weekly flamings were required for complete eradication as compared with 8 weekly flamings in one case and 10 in another under more representative rainfall conditions during 1943.

It is interesting to note that eradication was accomplished with 10 flamings at 13-day intervals (table 1). During 1943 this particular frequency was not tested but 10 flamings at 14-day intervals did not effect complete eradication. This suggests that the optimum frequency will probably depend on soil moisture and other factors affecting rate of growth.

Field-Scale Experiments

Fallow flaming experiments were conducted on Smithfield Plantation (Chamberlin), St. Delphine Plantation (Plaquemine) and Evergreen Plantation (Plaquemine) to determine the practicability of fallow flaming for field-scale eradication of Johnson grass. Experimental sites in all cases showed Johnson grass infestations approaching what may be considered the saturation point (8 to 10 tons of rhizomes per acre). Flame treatments were applied on whole "cuts" during late spring and early summer at weekly and also 10-day intervals by means of a power operated weed burner of the type commonly used along railroad tracks.

Results obtained in these experiments confirmed, in general, results obtained on small plots as reported herein. No attempt was made to secure systematic observations on changes induced in the concentration of solids in rhizome juice but observations made occasionally during the period of treatment indicated that depletion of food reserves comprising soluble solids in the juice proceeded approximately as observed in connection with small plot tests at the Houma Station. Following a period of 9 to 12 weeks of such treatments the great bulk of the rhizomes died and disintegrated. There were encountered however two complicating factors which may greatly affect the value of fallow flaming as a practical means of eradication.

1. While the vast majority of plants were destroyed in the course of 9 to 12 weeks of weekly flaming an occasional plant survived here and there over the field at the end of that period, thus necessitating a longer period for complete eradication.

2. Areas cleared of the weed became reinfested from the germination of seedlings during late summer when flame treatments were discontinued.

In experiments on Evergreen and St. Delphine Plantations tests were made of the effect of fallow flaming in combination with occasional plowing. On Evergreen Plantation the following treatment resulted in practical elimination of rhizomes: Flaming, June 16, 23, and 30; Flush plowing July 6; Flaming July 7, 14, and 21; Seed bed preparation July 28. On St. Delphine the following treatment resulted in approximately 98 percent reduction in infestation: Flaming August 8, 15, 22; Flush plowing August 29; Flaming September 5; Seed bed preparation September 12. In each case the land was planted to cane following the completion of fallow treatments.

Discussion of Results

The observed reinfestation of cleared areas from the germination of seedlings is considered the most serious complication encountered in experimental trials of fallow flaming as a practical means of eradicating Johnson grass. Relatively little is known regarding the longevity of Johnson grass seed in the soil under our conditions.

According to Dr. T. J. Arceneaux,[2] who has extensively studied the problem, Johnson grass seed produced under Southern Louisiana conditions shows an exceedingly low percentage of germination,—commonly from ½ to 2 percent. Exceptionally however, and that was extensively found to be the case with seed produced in 1943, the germination may be as high as 25 to 30

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percent. Therefore extensive reinfestation of cleared areas from seedlings as oberved in 1944 may not be at all representative. In any event the apparent importance of reinfestation from seedlings under some conditions at least emphasizes the need for accurate information on percent viability and longevity of Johnson grass seed under field conditions as a prerequisite to any intensive eradication endeavor.

Summary

In small-scale experiments conducted in 1944 at the U. S. Sugar Plant Field Station near Houma the number of flamings required for eradicating Johnson grass ranged from 10 at 13-day intervals to 19 at 5-day intervals. Comparisons of results obtained during 1944 and 1943 indicate that the optimum flaming frequency for most efficient results will depend on factors affecting the rate of growth during periods between treatments, and that the time required for eradication may be decreased by increasing the rate of growth.

Results of plantation-scale experiments were in good agreement with results of small-plot tests conducted at the Houma Station. However, extensive reinfestation of cleared areas through seedling germination as observed on 3 cooperating plantations in Iberville and West Baton Rouge Parishes during 1944 may present a serious disadvantage in the practical utilization of fallow flaming or other procedures for accelerated destruction of Johnson grass.

[1] Arceneaux, G., and Hebert, L. P. Preliminary studies of periodic flaming as a means of controlling Johnson grass and alligator weed on sugarcane lands. Sug. Bull.: 22 No. 3. pp. 21-23. Nov. 1, 1943.

[2] Unpublished results of germination tests on numerous lots of Johnson grass seed from Louisiana sources.

Revised Sugar Rationing Regulation

(*Official Release*)

PART 1407—*Rationing of Food and Food Products*

Sugar

A rationale accompanying this amendment has been issued simultaneously herewith and has been filed with the Division of the Federal Register.

Second Revised Ration Order 3 is amended in the following respects:

1. Section 3.16 (b) (12) is added to read as follows:

(12) The amount of any overdraft which an industrial user has failed to make good at the time his account or accounts are closed under section 3.26.

2. Section 3.20 (d) is added to read as follows:

(d) If an industrial user who has more than one establishment registered together and who has more than one account for those establishments, overdraws any one of those accounts, he may not draw checks on any of those other accounts except for deposit in the overdrawn account, until he repays the amount of that overdraft.

3. Section 3.26 is added to read as follows:

SEC. 3.26 *Withdrawal of ration banking privileges because of overdrafts on ration bank accounts.* (a) Where a District Office is notified by a ration bank than an industrial user has overdrawn his ration bank account, it shall send him a notice in writing. The notice shall be delivered personally or sent by registered mail. The notice shall state:

(1) The amount of the overdraft on the industrial user's ration bank account, as shown by the records of the bank;

(2) That if the account is not overdrawn, the user must satisfy the District Office of that fact within five days after receipt of the notice; otherwise, the overdraft will be deemed to be admitted by the user;

(3) That if the account is overdrawn, the user may not draw any checks against the account until he repays the amount of the overdraft in accordance with (4):

(4) That his account will be closed and his ration banking privileges withdrawn unless he repays the amount of all overdrafts on that account before the sixteenth day after the beginning of the allotment period after the one in which he received the notice of the overdraft;

(5) That he must give to the District Office, as proof of payment of the overdraft, a duplicate deposit

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slip showing receipt by the bank of a deposit of ration evidences at least equal to the amount of the overdraft.

(b) If an industrial user fails to repay all overdrafts on the account in question within the time specified in the notice, the District Office shall instruct the bank to close the user's account. If the user has more than one establishment registered together and has more than one account for those establishments, the District Office shall instruct each of the banks where such an account is kept to close it.

Raw Cane Sugar Advisory Committee

The appointment of an industry advisory committee to represent processors of raw sugar made from sugarcane grown in the continental United States was announced recently by the Office of Price Administration.

The new committee, composed of eight members of the industry, represents about 60 companies. Ceiling prices for these companies are contained in Maximum Price Regulation 16—Raw Cane Sugar—and Revised Price Schedule 60—Direct Consumption Sugars.

Approximately 80 per cent of the processing of raw cane sugar in the United States is done in Louisiana. There are two companies in Florida with one factory each.

Members of the Continental Sugar Cane Processors' Industry Advisory Committee are:

George L. Billeaud,
Billeaud Sugar Factory,
Broussard, La.

Jules M. Burguieres,
Cypremort Sugar Co., Inc.,
Louisa, La.

H. Langdon Laws,
Harry L. Laws & Co., Inc.
Cinclare, La.

Bronier Thibaut,
Glenwood Co-op., Inc.
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Clarence R. Bitting,
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C. S. Churchill,
Evan Hall Sugar Co-op., Inc.
McCall, La.

Richard M. Murphy,
Waterford Sugar Co-op., Inc.
Killona, La.

H. C. Vacarro,
Realty Operators, Inc.,
New Orleans, La.

The District Office shall notify the user and his Board (if he is registered with a Board) of the closing of the account or accounts and of the amount of the remaining overdraft on the account at the time it was closed. Upon receipt of such instructions and notices:

(1) The bank shall close the industrial user's account and shall notify the District Office of the balance in the account as of the time it was closed:

(2) The user must give up the District Office all ration checks and check books he has;

(3) The District Office or Board with which the industrial user is registered shall charge the amount of the remaining overdraft to the industrial user as excess inventory.

(c) If an industrial user whose account is overdrawn, after receiving a notice of that fact, draws another check before he satisfies the conditions in paragraph (a) (4), his account shall be closed by the District Office in the way described in paragraph (b). If an industrial user who has repaid the amount of an overdraft, after receiving the notice described in paragraph (a), again overdraws the account the District Office shall send him a notice in writing (to be delivered personally or by registered mail) of the amount of the overdraft. (If he has more than one establishment registered together and has more than one account for those establishments, the same rule applies whether or not his latter overdraft is on the same account.) If he does not satisfy the District Office within five days after receipt of this notice that his account is not overdrawn, the District Office shall close the account, and if he has more than one account for a group of establishments registered together, all those accounts, in the way described in paragraph (b).

(d) When an industrial user's ration bank account has been closed under this section, the District Office may take any steps which it deems reasonably necessary to inform the user's present and prospective suppliers that the account has been closed, so that they will know that he has no longer the right to draw ration checks.

(e) Nothing in this section shall be considered to waive or exclude any other action which may be taken by the Office of Price Administration with respect to any violations by any industrial user of this order or Revised General Ration Order 3A.

This amendment shall become effective February 7, 1945.

NOTE: All reporting and record-keeping requirements of this amendment have been approved by the Bureau of the Budget in accordance with the Federal Reports Acts of 1942.

Issued this 3d day of February 1945.

CHESTER BOWLES,
Administrator.

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Hawaiian Cane Price 1945

(*Official Release*)

Determination of Fair and Reasonable Prices for the 1945 Crop of Hawaiian Sugarcane, Pursuant to the Sugar Act of 1937, as Amended

Pursuant to the provisions of subsection (d) of section 301 of the Sugar Act of 1937, as amended, and Executive Order 9322, issued March 26, 1943, as amended by Executive Order 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable prices for the 1945 crop of Hawaiian sugarcane. Fair and reasonable prices for the 1945 crop of Hawaiian sugarcane heretofore agreed upon between the several processors in Hawaii and the producers of such sugarcane are fair and reasonable, and the payment of such prices shall be deemed to meet the requirements of subsection (d) of section 301 of the Sugar Act of 1937, as amended, with respect to such crop: *Provided, however,* That the processor shall not be deemed to have met such requirements if, through any subterfuge or device whatsoever, the returns from the 1945 crop of Hawaiian sugarcane to the producer are reduced below those determined above.

Issued at Washington, D. C., this 1st day of January 1945.

Wilson Cowen, *Assistant War Food Administrator.*

Hawaiian Farming Practice

(*Official Release*)

Determination of Farming Practices in Connection With Production of 1944 Crop of Sugarcane in Hawaii

Pursuant to the provisions of section 301 (e) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Farming practices in connection with the production of the 1944 crop of sugarcane in the Territory of Hawaii —(a) *Application of fertilizer.* The requirements of section 301 (e) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to a farm in the Territory of Hawaii if fertilizer is applied as follows:

(1) *Amount.* There shall be applied to land on which sugarcane is growing during 1944 sufficient chemical fertilizer to provide an average quantity of plant food per acre fertilized equal to not less than 90 pounds.

(2) *Acreage requirement.* The number of acres on which fertilizer is applied in 1944 shall be not less than 80 percent of the number of acres on the farm on which sugarcane is planted, or a ratoon crop of sugarcane is started, at any time during 1944.

(b) *Definitions.* "Chemical fertilizer" means commercial chemical fertilizer of which not less than 15 percent of the gross weight consists of plant food. "Plant food" means the aggregate amount of nitrogen, available phosphoric acid, and water-soluble potash.

This determination supersedes the "Determination of Farming Practices to be carried Out in Connection with the Production of Sugarcane During the Crop Year 1944 for the Territory of Hawaii" issued January 20, 1944.

Issued this 40th day of January, 1945.

(Signed) Grover B. Hill,
First Assistant War Food Administrator.

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THE SUGAR BULLETIN

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Government Policies and Industry Problems

By C. J. Bourg

Among the most serious problems of food production and distribution is the critical shortage of sugar. This shortage has been officially recognized by the War Food Administrator, the Price Administrator, and other high Government officials.

The record of the Louisiana sugar industry during the war years has been the most consistent of any State or Area. The Louisiana production of sugar in 1942, 1943 and 1944 has averaged above 400,000 tons per annum, which is considerably in excess of the average production in pre-war years.

Costs and Returns

The cost of production has increased in the sugar processing industry as it has increased in all food processing operations. In the case of the Louisiana sugar processing industry, the minimum rate of 30c per hour, which prevailed at the time of the declaration of war, was increased to 40c per hour in January 1943 under the Fair Labor Standards Act.

In January 1942, the OPA established the ceiling price on raw sugar at 3.73c per lb., based upon costs of production in 1941 and previous years. Since January 1942, the OPA has maintained the ceiling on raw sugar without an increase to compensate for advances in cost and particularly the above-mentioned 25% increase in labor rates. The establishment of a 3.75c per lb. ceiling on raw sugar in September 1944 was for the purpose of uniformity of prices at all ports and was not based on any investigation or conclusion with respect to cost increases.

The War Labor Board, on November 11, 1944, revised its General Order No. 30 to provide that increases in wage or salary rates, which do not bring such rates above a 50c per hour minimum standard, may be made by employers without obtaining specific approval from WLB. This was for the convenience of employers and of WLB administration. However, the WMC in December 1944 authorized its regional and local offices to furnish a statement of availability to any employee who is not receiving the 50c per hour minimum. The effect of such a regulation by one agency of the Federal Government would be to establish by indirection a minimum wage of 50c per hour in an industry which, under the law, is required to pay no more than the 40c per hour minimum established through the provisions of the Fair Labor Standards Act.

The OPA has taken the position that under the "hold-the-line" order, the ceiling price of raw sugar will not be changed. Obviously, if the WMC brings about a situation which indirectly forces an increase of minimum wages from 40c to 50c per hour and the higher brackets in proportion, the sugar processing industry cannot long continue to operate.

A survey just completed by Louisiana State University economists and accountants reveals that in processing the 1944 crop, Louisiana processors operated at a loss on the average for the industry. It is clear, therefore, that Louisiana processors are facing a "squeeze" between two Government policies operating in opposite directions. A decision by the President or the Economic Stabilization Director must determine which policy is the more important. If the

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price cannot be increased, then the cost of production must not be increased; or vice versa, if costs be increased, then the price must advance to a higher ceiling.

Market Prices

The negotiations in connection with the purchase of the 1945 Cuban sugar crop are reported to have brought about an agreement on a price of 3.10c per lb. of raw sugar f. o. b. Cuba. For the last three crops, the price has been 2.65c per lb. This increase of .45c which Cuban producers are to receive will not be charged to the purchasers of raw sugar in the United States, however. The market price of domestic raw sugar will remain the same, although foreign producers will receive .45c more per lb. net. It has been the custom in the sugar market for more than a century that the price of Cuban sugar delivered to New York is the basic price for all raw sugars sold in the United States market. This basis has been maintained during the war years. There is no apparent sound reason of public policy to change it.

Under the war powers granted to the President, the actual payment of tariff duties has been suspended in the case of purchases by the U. S. Government of foreign sugar delivered at a foreign port. Nevertheless, in the case of Cuban sugar, the price charged to refiners for raw sugar has been the sum of:

2.65c paid to Cuban producers
.35c average normal freight
.75c tariff duty

3.75c total

Should the OPA continue to refuse to change the price ceiling, the effect of the proposed handling of Cuban sugar will be to reduce the tariff from .75c to .30c, and to deprive domestic producers of a basic price in the U. S. market of the customary delivery price of raw sugar at New York. The plan described above would be in direct violation of several laws of Congress, particularly the Tariff Act (no reduction of more than 50% in any duty) and the Price Control Act (no subsidy to foreign producers).

The War Food Administrator has offered incentives to sugercane and sugar beet growers to encourage a maximum production of domestic sugar. No incentive has as yet been offered to sugar processors in Louisiana. Of greater concern for the future than an incentive to processors is the maintenance of the relative position of domestic sugar in the U. S. market as compared to foreign sugar. It is most important to emphasize that the increase in the market price received for Cuban sugar will become available to other foreign sugar producers (Dominican Republic, Haiti) who have previously made agreements for the sale of sugar to be delivered in 1945. Consequently, all foreign sugar producers would receive a market price for their product on a higher basis than domestic producers. Such a development will create new problems in the post-war reconversion, to the continuing detriment of domestic production.

The maximum contributions of the Louisiana sugar industry to the war effort, as shown by production figures, deserves the consideration of the President and those members of his Cabinet directly concerned, as well as the Congress which determines and establishes the public policy for the U. S. Government. Government policies can be co-ordinated to reduce industrial and agricultural problems. Such co-ordination will encourage production in war times and make easier the adjustments of post-war.

Contact Committee Meets

An all day meeting of the Contact Committee of the American Sugar Cane League was held at Baton Rouge, Louisiana on March 8, 1945. Those present were:

Contact Committee

Stephen C. Munson	Alfred A. Thibaut
H. K. Bubenzer	George Billeaud
Elliott Jones	Hampton Stewart
F. A. Graugnard, Jr.	E. A. Maier
Horace Nelson	C. A. O'Brien
Bronier Thibaut	

Houma Station

George Arceneaux	Eaton M. Summers
E. V. Abbott	Leo P. Hebert
L. G. Davidson	E. K. Bynum
J. W. Ingram	Louis Meyeaux

Experiment Station

W. G. Taggart	C. W. Edgerton
I. L. Forbes	P. J. Mills
E. C. Simon	P. H. Dunckelman
C. B. Gouaux	H. T. Barr
C. E. Smith	W. H. Carter
M. B. Sturgis	I. L. Saveson
C. F. Simmons	J. N. Efferson
A. L. Dugas	

Extension Division

F. S. Edmiston	A. E. Camus
R. A. Wasson	W. E. Williams
S. J. Bowles	J. Lamendola
A. B. Curet	R. J. Badeaux
F. A. Swann	J. B. Garrett
	Otis Broussard

Visitors

R. M. Ramp	W. M. Grayson
Marcel J. Voorhies	Joseph Beaud
E. K. Ventre	Ringgold Hynson
R. T. Gibbens	Lionel Kling
C. S. Stewart	C. S. Walton
Frank Gayle	Ben Devall
R. J. LeBlanc	B. J. Smith
Ed Munson	C. J. Bartlett
D. J. DeArensbourg	W. C. Byrne
Ivan Wilbert	Mr. Munson
John Wilbert	Mr. Davis

The meeting was called to order by Mr. Stephen Munson, Chairman, who called on Mr. E. K. Ventre for a report on the recovery of aconitic acid from sugar cane. Mr. Ventre discussed the equipment necessary in a raw sugar factory and the chemical method for obtaining this new by-product from sugar cane, as well as the approximate cost of the process and possible future developments for it after the war.

Mr. R. M. Ramp, Agricultural Engineer from Houma, Louisiana, gave a report on the work which his department is planning on the development of machinery for all phases of sugar cane production and harvesting. Mr. Ramp suggested that a committee of at least four representatives of machinery men for sugar cane production be appointed to review with sugar cane breeders and the Contact Committee the new varieties of cane before they are released in order that their adaptability to mechanization can be considered before they are released for commercial planting. After discussion, it was decided that the Contact Committee would take this suggestion under advisement before making a final decision.

Mr. C. W. Stewart was asked to give a report on mill work for last year, but Mr. Stewart advised the Committee that he had not had time to assemble the data and prepare a report. However, he gave a resume of part of the 1944-45 data of the Audubon Sugar Factory.

There was a full discussion among those present concerning the cause or causes of the low yield of sugar from cane last season, particularly with reference to the effect of trash in cane when it is taken to the mill, and the probable ill effects of leaving cane in the field after it is cut before taking it to the mill for grinding, but no final conclusions were reached.

Mr. Harold Barr reported that he understood there would be a surplus of butane and propane during the summner which could be used for farm machinery if the W.P.B. would authorize their use for that purpose. Mr. Munson suggested that Mr. Barr find out definitely if there will be such a surplus, and what procedure will be necessary to obtain permission to use it for farm machinery.

A report was given by Dr. M. B. Sturgis and Mr. C. B. Gouaux covering the work done on fertilizer tests in the sugar cane area during the past season. Dr. Charles F. Simmons then reported on the proposed field design for the next cane fertilizer tests and outlined the work which they plan to do. Dr. Sturgis stated that the tests are to be confined to terrace soils as on these soil types the fertilization question is greatest.

Mr. Ed Munson gave a report on the total number of acres of promising varieties of cane now being grown on the primary and secondary stations, as well as some of the seed cane now growing in conjunction with the station test fields, after which there was a general discussion of varieties, particularly C.P. 36-105. Mr. Simon was asked to give a statement as to the good and bad qualities of this variety, and he reported that it did not shade as much as C.P. 34-120, but that he considered it a very promising cane. He also stated that it has shown some borer susceptibility at the station which might be a factor against it. Mr. Ingram, of the Houma Station, reported that his studies had shown the variety to be less susceptible than Co. 281.

A report was given by A. L. Dugas on his borer control work for the past season, and he also had colored slides shown to those present showing borer damage to cane, and the results obtained with different treatment. Mr. Dugas also gave a brief report on the application of various insecticides on soybeans for the control of the velvet-bean caterpillar.

Mr. Munson announced that a sub-committee of the Contact Committee would meet with representatives of the two stations the first week in June to discuss unreleased varieties and recommendations for their release, and that there would be a meeting of the Contact Committee in Houma during the second week in June to make recommendations for the release of new varieties, based on the report of the subcommittee.

After discussion, it was agreed that the next meeting of the Committee, together with the staffs of the two stations, would be held at the University on May 3.

Recommendations for the Control of the Sugarcane Borer in Louisiana in 1945 by Dusting with Cryolite

The following recommendations are made for insecticidal control of the sugarcane borer (*Diatraea saccharalis* (F.)) in Louisiana in 1945.* They are based on extensive cooperative investigations conducted since 1937. Either the first or the second generation of borers may be controlled successfully by dusting with either synthetic or natural cryolite, although seldom should it be necessary to dust the same field for both generations. First generation dusting is preferable to control borers on a plantation scale. This is especially true where heavy infestations of the yellow sugarcane aphid developed in 1943 and 1944.

First-Generation Control

First-generation borers are those hatching from eggs laid by moths that have come from overwintered larvae. Dusting should be begun upon their appearance in large numbers which is usually during the middle of April but due to the early spring this year it may be necessary to begin dusting during the last week of March or the first week of April. Dusting is recommended for the control of first-generation borers (1) over an entire plantation, (2) on heavily infested areas from which there may be a substantial spread of borer moths into adjoining areas, and (3) on smaller areas with a localized infestation. Dusting of a small part of a large infested area for the control of first-generation borers is a waste of effort because of the possibility of reinfestation from the nearby untreated cane.

The following points are important for successful control of first-generation borers:

1. Dusting four times at weekly intervals, beginning with the first hatching of your borers.
2. Apply dust at the rate of about 8 pounds per acre per application by ground machine and 8 to 10 pounds per acre by airplane, while the air is quiet and the plants are wet with dew, which is usually between about 6 p. m. and 9 a. m.
3. Use an airplane or power dusting machine for treating large areas. Rotary hand guns may be used in small areas. Under present conditions, it appears that dusting more than 300 acres on any one plantation by ground machine is impractical. In dusting by airplane the width of swath should not be over 36 feet.
4. Use one or two nozzles to the row. Two nozzles, however, give some insurance against incomplete coverage through clogging of a nozzle.

The estimated cost of dusting for the control of first-generation borers is $6 to $7 per acre. About 10 acres can be treated per hour with a 3-row dusting machine and about 15 acres per hour with a 5-row machine. One man with a hand dust gun can dust about 1 acre per hour.

Second-Generation Control

Second-generation borers usually begin to appear about June 10 to 25, but will likely appear earlier this year if present conditions continue to prevail. Dusting to control the second generation is recommended for fields not previously dusted, and for entire plantations or small areas where there is danger of reinfestation from adjacent untreated cane. The important points to be observed are as follows:

1. Dusting four times at weekly intervals as for first-generation borers, beginning with the first hatching of second-generation borers.
2. Apply the dust between 6 p. m. and 9 a. m. at the rate of about 10 pounds per acre per application.
3. Use an airplane, rotary hand gun, or a power dusting machine built up high enough to avoid breaking the cane. Large-scale dusting must necessarily be done by airplane. In dusting by airplane the width of swath should not be over 36 feet.

The cost of dusting for second-generation borers is about the same as for first generation; and, if done by ground equipment, the time required for making an application is somewhat longer.

*These recommendations were prepared jointly by the Bureau of Entomology and Plant Quarantine of the Agricultural Research Administration, United States Department of Agriculure, and the Louisiana Agricultural Experiment Station.

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SPECIAL NOTICE
To The Louisiana Sugar Industry

The Labor Committee of the American Sugar Cane League has been contacted by the War Food Administration, which inquired if it would be all right with the Louisiana sugar industry for the Government to determine and promulgate the 1945 cultivating wage rates applicable in the Louisiana sugar belt on the basis of the evidence secured at the hearing last fall, or whether it would be advisable for the War Food Administration to sponsor an open meeting to discuss the matter with the representatives of the Louisiana sugar industry.

The Labor Committee firmly requested that the latter procedure be adopted, namely that a general meeting in the Louisiana sugar belt be sponsored by the War Food Administration and that this meeting be open to all representatives of the Louisiana sugar industry.

The Labor Committee of the American Sugar Cane League usually accepts the responsibility of presenting the Louisiana sugar industry recommendations with respect to labor, wages and working conditions at all hearings or meetings The Labor Committee expects to follow the same procedure this year.

However, the Labor Committee feels that those in the industry who feel that changes in wage rates or working conditions should be made, are expected to make their views known in writing to the Labor Committee. In making known their views, evidence and/or recommendations should be furnished which will justify the changes requested. In other words the Committee is requesting the industry to accompany any complaint or suggestions for a change with a definite, practical proposal so that the requested changes may be properly supported.

Frank L. Barker, Chairman, Labor Committee.

The West Indian Sugarcane Fulgorid in Louisiana and Mississippi

By J. W. Ingram and E. K. Bynum
U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine

The West Indian sugarcane fulgorid, *Saccharosydne saccharivora* Westwood, a sucking insect that feeds on sugarcane, was found for the first time in Mississippi in September and in Louisiana in December of 1944. A survey of sugarcane fields in Mississippi revealed the presence of this insect in 7 of 62 fields examined. The infested fields were located near Shubuta, Laurel, Meridian, 13 and 17 miles north of Meridian, 4 miles south of Newton, and 1 mile south of Bay Springs. All the infested fields were within a radius of 60 miles of Meridian. What appeared to be egg-mass coverings were also seen on cane 1½ miles north of Van Cleave in Jackson County, about 15 miles from the Gulf. Fields of sugarcane were examined in all Mississippi counties on and south of a line from Natchez to Waynesboro. In addition, canefields were examined in Clarke, Jasper, Smith, Simpson, Copiah, Lauderdale, Newton, Scott, Leake, Neshoba, and Kemper Counties, with negative results.

The fulgorid was present in 12 of 95 locations examined in Louisiana, and in Lafayette, St. Martin, St. Landry, Iberia, St. Mary, Lafourche, Assumption, St. John the Baptist, and Ascension Parishes. Inconclusive evidence of infestation was also observed in West Baton Rouge and Tangipahoa Parishes. No signs of this insect were seen east of Franklin, south of Thibodaux and Burnside, or north of Cinclare. The apparently intermittent character and limited extent of its distribution as now known, the extremely small numbers present in all infested fields that were discovered in Mississippi and Louisiana, and the fact that its presence in these States was not detected until this year, indicate that it has been in Louisiana and Mississippi for only a few years.

The West Indian sugarcane fulgorid is common in sugarcane fields throughout the West Indies, in Trinidad, and in Central America. It was first found injuring sugarcane in southern Florida in 1936 and on sugarcane in southern Georgia in 1939. It is not now known to occur in the continental United States elsewhere than in the southern portions of Florida, Georgia, Mississippi, and Louisiana, except that a single specimen labeled "Houston, Tex., June 11, 1937" is in the U. S. National Museum collection.

The adult fulgorid is about 1/5 inch long, pale green with transparent wings, and often bears white cottony fluff at the rear end of its body. The translucent-white elongate-oval eggs, about 1/25 inch long, are laid several in a row side by side in a slit on the underside of leaves. The slit is covered with a little tuft of white cottony fluff. The nymph, or immature insect, is pale greenish and bears a characteristic long tail-like white filament at its rear end. Both nymphs and adults are

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What Constitutes An Official "Interpretation"

Persons found to be in violation of OPA regulations frequently contend, by way of defense, that before making the sale of the commodity involved, they sought the advice of an officer or employee of OPA and were given an "interpretation" of the applicable regulation upon which they relied and acted.

Further investigation has almost invariably disclosed that such alleged advice or "interpretation" was given orally by an officer or employee and, in many cases, such employee has left OPA and is not available to admit or deny the contention of the person charged with violation.

In order to avoid misunderstandings and violations arising from such situations, all persons dealing in articles subject to price control are urged to keep in mind and observe the provisions governing interpretations found in Revised Procedural Regulation No. 1.

An interpretation rendered by an officer or employee of OPA is official only if such interpretation was requested and issued in accordance with these provisions. An official interpretation is applicable only to the particular person to whom, and to the particular factual situation with respect to which, it is rendered, unless publicly announced as an interpretation of general application.

Any person desiring an official interpretation of the Emergency Price Control Act of 1942 or any regulation, price schedule, order, requirement or agreement under the Act, *must request it in writing from the nearest OPA District Office.* The request must set forth in full the factual situation out of which the question arises.

An official interpretation may be given *only in writing and must be signed by an OPA officer authorized to render interpretations.* However, intrepretations of general application may be announced publicly by properly authorized OPA officers.

Any official interpretation may be revoked or modified by publicly announced statement by an authorized official or by a notice published in the Federal Register. An official interpretation addressed to a particular person may also be revoked or modified at any time by a statement in writing mailed to such person and signed by an authorized OPA official.

nearly always found on the underside of the leaves. They are sometimes present in the central whorl but rarely on the upper leaf surface. They have been found on several other grasses in addition to sugarcane.

This fulgorid causes direct injury by sucking juice from the cane leaves. Its egg deposition slits also form entrance places for red rot disease, its droppings of honeydew form a medium for the development of sooty mold on the leaves, and it may possibly be a vector of sugarcane mosaic or chlorotic streak disease. It is one of the best known pests of sugarcane in the West Indies, where it was formerly called "black blight" because of the sooty mold associated with it. Locally destructive outbreaks occur in those Islands, where dusting with calcium cyanide has been recommended to control it, but where the insect is usually held in check by parasites, as in also the case in southern Florida.

Injury by this insect is usually of minor importance in the continental United States, but in September 1936 fields of Co. 290 cane at Fellsmere, Fla., were observed to be suffering heavier damage by this insect than by any other insect present. Many of the heavily infested leaves were withering and dying, and the leaves were black with sooty mold growing in the honeydew from the fulgorids. It was estimated that a loss of at least 10 percent of the crop would result. Although other fairly heavy infestations have been observed in some fields in both the Fellsmere and Lake Okeechobee areas in Florida, the injury caused by this insect is usually light or negligible. No appreciable injury has been observed in Georgia, Mississippi, or Louisiana.

It is not likely that the fulgorid will ever be of much direct economic importance in Georgia, Alabama and Mississippi, or in Louisiana north of the sugar section. It might, however, be of appreciable indirect importance by providing for the entrance of sugarcane diseases into the leaves or carrying them from plant to plant. It is possible also that this insect may occasionally cause material damage in some fields within the sugar section of Louisiana. It would appear to be well adapted to conditions in cane grown on the light, comparatively dry soils in the Bayou Teche area and might cause heavier damage there than it causes in Florida, as does the yellow sugarcane aphid. Also, the effectiveness in southern Louisiana of the parasites that keep the insect under control in the West Indies and southern Florida remains to be seen. As is the case with parasites of the sugarcane borer larva, they might be less effective in Louisiana. Dusting with cryolite to control the sugarcane borer in Louisiana might also cause conditions favorable for fulgorid multiplication in the same manner as it does for yellow sugarcane aphid multiplication, persumably by killing its parasites.

Since there is a possibility that the West India sugarcane fulgorid might at times cause considerable damage in the sugar section of Louisiana, it would be advisable to restrict its further spread wherever practical. Uninfested plantations could prevent the introduction of the pest on seed cane by giving it the hot-water treatment.

"Spencer's Handbook"

The Editor of *The Sugar Bulletin* acknowledges with appreciation the receipt of a copy of *"Cane Sugar Handbook"*, eighth edition, sent with the compliments of the publishers, John Wiley & Sons, Inc., of New York, and the surviving author, George P. Meade, B.S., Ch. E.

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International Trade

(*By C. J. Bourg*)

The Ways and Means Committee of the U. S. House of Representatives will begin hearings this week on the Doughton Bill (H. R. 2652) whose purpose is to extend and broaden the authority to negotiate reciprocal trade agreements with other countries.

From the standpoint of sugar, the tariff has not been effective since the establishment of the quotas under the Sugar Act which includes direct compensation to domestic producers for any reduction in the tariff. Therefore, to the extent that the quota system is continued, thereby limiting definitely the amount of foreign sugar that may enter the United States in any one year, and assuming that the amount of the conditional payments to producers of sugarcane and sugar beets is at least equal to the reduction in the tariff on foreign sugars, the domestic sugar industry can be protected regardless of tariff changes. But it is of the greatest importance that any authority granted to the President of the United States and exercised by the negotiators of the State Department should be subject to the limitation requiring the safeguards and protection afforded by quotas and conditional payments or some program as affective. A statement recently made by the Director of the Office of International Trade in the State Department creates some concern about post war policies. Director Bernard F. Haley advocates a world organization to supervise commodity pacts among nations and he recommends the following as the basis for the international organization. Instead of discussing this proposal, it is suggested that the readers interpret the policies advocated by the Director in the light of the manner in which they may affect the domestic production of sugar (note 2d)

1. That no international commodity arrangement involving the limitation of production or exports or allocating markets should be established until after:

(a) An investigation of the root causes of the problem which gave rise to the proposal;

(b) Determination that a burdensome surplus has developed or threatens to develop;

(c) Determination that conditions cannot be corrected by the operation of normal market forces;

(d) Formulation of a program of adjustment believed to be adequate to insure substantial progress toward solution of the problem within the time limits of the agreement.

2. That any international commodity agreement which is adopted should operate in accordance with the following principles:

(a) It should be open to accession by any interested country;

(b) In any such arrangement, the countries adhering thereto which are largely dependent for consumption on imports of the commodity should have together a voice equal to those largely interested in obtaining export markets for their production of the commodity;

(c) In any such agreement provision should be made, whether through the maintenance of reserve stocks or otherwise, for assuring the availability of supplies adequate at all times for world consumption requirements at reasonable prices;

(d) *Provision should be made for insuring that there are increasing opportunities for supplying world requirements from countries able to supply such requirements most effectively.*

3. And finally, that an international commodity arrangement should remain in effect for a limited term, such as five years, or less. Renewal should be condi-

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tioned upon a prior study and public report as to the manner in which it has conformed to these principles and as to progress that has been made in eliminating the underlying problem.

O. P. A. Policy

The recent decision of the U. S. Emergency Court of Appeals in the case of Heinz versus Bowles, referred to as the "meat decision", reversed a policy of O. P. A. with respect to price controls which will affect sugar. In a letter written to Senator Overton by the Price Administrator on March 14, he declared that in considering the price ceiling on raw sugar the O. P. A. would necessarily have to determine the effect of the price ceiling on the "sugar industry as a whole", (even including all cane sugar refiners). A reading of the paragraph quoted below from the meat decision, reveals that O. P. A. may not ignore the disastrous effect of the raw sugar price ceilings upon "a whole group of producers constituting an important segment of the industry who, because of the nature of their operations, have a common economic situation that sets them apart from the rest of the industry". Certainly the domestic producers of raw sugar constitute such a group.

> "If the maximum prices in RMPR 169, in conjunction with the subsidy payments, do not make adequate provision for the non-processing slaughterers as a group, do not afford a sufficient margin for profitable operation by this the most numerous group in the industry, then the regulation is invalid as to the non-processing slaughterers, despite the fact that the regulation is, as we held in the *Armour* case, generally fair and equitable as applied to the processing slaughterers who constitute the greater part of the industry by volume of business. We reject the Administrator's argument to the contrary. It is true, the Act does not guarantee a profit to each individual producer. And so, if the maximum prices enabled most of the non-processing slaughterers to operate profitably, the regulation would not be rendered invalid by the fact that an occasional marginal producer in the group could not stay in business under the established ceilings. But it does not follow from this that the Administrator can ignore the disastrous effect of the regulation upon a whole group of producers constituting an important segment of the industry who, because of the nature of their operations, have a common economic situation that sets them apart from the rest of the industry."

Minimum Wages For 1945 Crop of Sugar Beets

(*Official Release*)

The War Food Administration has announced wage requirements to be met by producers of the 1945 sugar beet crop who apply for payments under the Sugar Act. The determination requires full payment of the wage agreed upon between producer and laborer if at a higher level than the specified minimum rates, which cover all work whether performed on a time or piece-work basis.

The principal changes from the 1944 basic rates are as follows: Thinning rates for fields planted with segmented seed have been adjusted so as to provide a uniform differential of $2.00 per acre below the rates for fields planted with whole seed. Hourly

(a) The wage rate agreed upon between the producer and the laborer but in no case less than the following:
(1) Basic rates by wage districts

Operation	THE BASIC RATES APPLICABLE TO A FARM ARE THOSE FOR THE WAGE DISTRICT IN WHICH THE FACTORY WHERE THE BEETS ARE CONTRACTED TO BE DELIVERED IS LOCATED[1]											
	I Ohio, Michigan, Indiana, and Wisconsin	II Minnesota, and Iowa	III Nebraska, Colorado, Kansas, and Southern Wyoming	IV South Dakota	V Southern and Eastern Montana, and Northern Wyoming	VI Western Montana	VII Northern Montana	VIII Utah and Southern and Eastern Idaho	IX Western Idaho and Oregon	X Washington	XI California (other Imperial Valley)	XII California imperial Valley
(i) For work performed on a time basis: RATE PER HOUR												
Blocking and thinning, and hoeing	$ .50	$ .50	$ .50	$ .55	$ .55	$ .55	$ .55	$ .50	$ .50	$ .55	$ .55	$ .50
Harvesting	.60	.60	.60	.65	.65	.65	.65	.60	.60	.65	.65	.60
(ii) For work performed on a piece rate basis: RATE PER ACRE												
Blocking and thinning:												
Fields planted with whole seed	$ 12.00	$ 12.00	$ 12.00	$ 13.00	$ 13.00	$ 12.00	$ 13.00	$ 11.00	$ 12.00	$ 12.00	$ 12.00	$ 11.00
Fields planted with segmented seed	10.00	10.00	10.00	11.00	11.00	10.00	11.00	9.00	10.00	10.00	10.00	9.00
First Hoeing	3.00	3.50	3.50	3.50	4.00	4.50	4.00	3.50	4.00	3.50	3.50	3.50
Second and subsequent hoeings or weedings	2.00	2.50	2.50	2.50	3.00	3.50	3.00	2.50	3.00	2.50	2.50	2.50
Blocking and thinning, hoeing and weeding as a combined operation: [2]												
Fields planted with whole seed	17.00	18.00[3]	18.00	19.00	20.00	20.00	20.00	17.00	19.00	18.00	18.00	17.00
Fields planted with segmented seed	15.00	16.00[3]	16.00	17.00	18.00	18.00	18.00	15.00	17.00	16.00	16.00	15.00
Harvesting:	Pull and top	Pull and top	Pull and top	Pull and top	Pull and top	Pull and top	Pull, top & load[4]	Pull, top, & load[5]	Pull, top, & load[5]	Pull, top, & windrow[6]	Pull, top, & load	Pull, top, & load
Minimum Rate Per Acre:	7.00	8.00	7.50	7.50	7.50	8.50	11.00	11.00	11.00	7.00	14.50	14.00
Rate per ton:	*					*	*	*	*		*	*
4	1.81	----	----	----	----	----	----	----	----	----	----	----
5	1.63	----	----	----	----	----	----	----	----	----	----	----
6	1.53	1.35	1.25	1.25	1.25	1.48	1.89	1.89	1.89	1.20	2.44	2.34
7	1.46	1.35	1.25	1.25	1.25	1.41	1.80	1.80	1.80	1.20	2.21	2.11
8	1.41	1.35	1.25	1.25	1.25	1.36	1.72	1.72	1.72	1.20	2.05	1.95
9	1.38	1.35	1.25	1.25	1.25	1.33	1.64	1.64	1.64	1.20	1.93	1.83
10	1.35	1.35	1.25	1.25	1.25	1.30	1.58	1.58	1.58	1.20	1.83	1.73
11	1.32	1.35	1.25	1.25	1.25	1.27	1.53	1.53	1.53	1.20	1.74	1.64
12	1.30	1.35	1.25	1.25	1.25	1.25	1.50	1.49	1.49	1.20	1.67	1.57
13	1.28	1.35	1.25	1.25	1.25	1.25	1.50	1.45	1.45	1.20	1.61	1.51
14	1.26	1.35	1.25	1.25	1.25	1.25	1.50	1.41	1.41	1.20	1.55	1.45
15	1.24	1.35	1.25	1.25	1.25	1.25	1.50	1.39	1.39	1.20	1.50	1.40
16	1.22	1.35	1.25	1.25	1.25	1.25	1.50	1.37	1.37	1.20	1.45	1.35
17	1.22	1.35	1.25	1.25	1.25	1.25	1.50	1.35	1.35	1.20	1.41	1.31
18	1.22	1.35	1.25	1.25	1.25	1.25	1.50	1.34	1.34	1.20	1.38	1.28
19	1.22	1.35	1.25	1.25	1.25	1.25	1.50	1.33	1.33	1.20	1.35	1.25
20 and over	1.22	1.35	1.25	1.25	1.25	1.25	1.50	1.32	1.32	1.20	1.34	1.24

[1] Except that wage rates prescribed for District XII sball apply to all farms located in tbe Imperial Valley.
[2] The combined rate is applicable in an instance wbere a written agreement includes all work of blocking and thinning, hoeings and weedings, regardless of tbe number of hoeings and weedings required.
[3] In Districe II where special machine methods are used the combined rates for thinning and hoeing shall be: Cross-blocked fields planted with whole seed, $16.00; planted witb segmented seed, $14.50; cross-cultivated fields planted witb wbole seed, $14.50; planted witb segmented seed, $13.00.
[4] In those instances where pulling, topping and piling is performed as a seperate hand labor operation because of mecbanical loading, the applicable rates for pulling, topping and piling shall be 83.3 percent of the rates sbown herein.
[5] In those instances where pulling and topping is performed as a seperate operation tbe applicable rates sball be 70 percent of the rates shown herein.
[6] In those instances where pulling, topping and loading is performed as a combined operation tbe minimum rate per acre and the rate per ton (for 6 tons or more per acre) as sbown herein shall be increased by 21 percent.
* The rate for all fractional tonnages rounded to the nearest tenth of a ton shall be in proportion within each interval.

rates for hoeing have been increased five cents, making them the same as the rates for thinning. The requirement of a minimum per acre guarantee for harvesting has been extended to all districts. A new wage district has been established for western Idaho and eastern Oregon. All of California, except the Imperial Valley, has been combined into one wage district. Small adjustments for some operations in certain districts have been provided.

The Sugar Act of 1937 requires, among other conditions of payment to growers, that all persons employed on farms in the production of sugar beets be paid in full for such work at rates not less than those determined to be fair and reasonable after public hearing and investigation. Public hearings were held in January throughout the beet growing area.

The applicable rates for a farm, or part of a farm covered by a separate labor agreement, are as follows:

(1) *Basic rates by wage districts.* See table.

(2) *Inexperienced workers.* For inexperienced workers during a reasonable training period when employed on a time basis, three-fourths of the applicable hourly rate specified in (1) table.

(3) *Workers 14 to 16 years of age.* For workers between 14 and 16 years of age when employed on a time basis, two-thirds of the applicable hourly rate specified in (1) table. (Employment of such workers not to exceed 8 hours per day).

(4) *Reduction for special machine methods.* In instances in which the use of a special machine method of planting, cultivating, or harvesting (other than those for which rates are specified in (1) table reduces the amount of labor required as compared with the method previously used, the piece rate for the operation involved may be reduced below the rate prescribed in (1) table by agreement between the producer and the laborer, provided such reduced rate is determined by the State committee as equivalent to the piece rate specified in (1) table for the amount of work involved.

(5) *Work not covered by specified rates.* For any work in the production, cultivation or harvesting of sugar beets for which a rate is not specified in (1) table the rate shall be as agreed upon between the producer and the laborer.

(b) General Provisions.

(1) In addition to the foregoing, the producer shall furnish to the laborer, without charge, the perquisites customarily furnished by him, such as a house, garden plot, and similar incidentals.

(2) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined herein.

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The Ditch Bank Problem

By Arceneaux, G., Agronomist, and Hebert, L. P., Assistant Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

The weed problem as it now exists on sugarcane plantations of Louisiana cannot be disposed of until an entirely satisfactory method of controlling weeds on ditch banks has been developed. The practice of confining eradication efforts to areas actually in cultivation may perhaps be justified as a temporary expedient, but the results cannot be expected to prove of lasting value as long as intervening drainage ditches remain heavily infested with Johnson grass or alligator weed.

Ordinarily a ditch together with the adjoining waste space, occupies a strip which may be from 15 to 20 feet in width between "border rows". Occasionally the space is even wider. This area is overlain with silt periodically removed from the bottom of the ditch in the course of occasional "plugging" from year to year. Ditch banks are therefore among the most fertile areas of a field, hence in the presence of adequate sunshine are an inviting place for plants in general and weeds in particular.

According to the traditional method, ditch banks and sides of ditches are weeded from time to time during the growing season by means of long-handled "sweeps". Within recent years, power mowers cutting in a horizontal plane slightly above ditch bank surfaces have come into extensive use for weeding purposes.

Ditch Bank Burners

In the spring of 1944 weed burners of a type used in the control of weeds along railroad tracks were recommended to several cooperating growers for use in connection with fallow flaming experiments. These burners were found very well suited to the burning of weeds along ditches and a number of the units were extensively used for this purpose on several plantations during 1944. One of the growers who had originally purchased one unit for experimental purposes procured 3 others for routine ditch bank flaming.

Burners of the type used develop the required heat from the combustion of a mixture of fuel oil and air. The entire assembly, consisting essentially of a fuel pump, an air blower, an air-cooled gasoline motor, an extension pipe and burner head together with manipulating devices for lateral and vertical movement of the burner head is put together in a fashion for mounting on a suitable vehicle. Burners of this type should not be confused with patented flaming equipment designed for the specific purpose of flaming weeds among growing cane.

The following summary of information obtained from several of our cooperators[1] who made extensive use of ditch-bank burners during 1944 may be of interest to growers contemplating future use of similar devices.

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Average daily cost of operation (labor, fuel traction and depreciation)	$29.73
Average fuel consumption (per hour)	34.25 gallons
Average length of ditches (both sides) satisfactorily burned per day	4.92 miles
Average plantation acreage satisfactorily serviced per burner unit	1194 acres

The type of fuel used ranged from tractor fuel to industrial fuel oils. The latter, because of their higher heat value proved, on the whole, most suitable.

The reported length of ditches which could be satisfactorily burned per day ranged from 3.4 to 8 miles, depending obviously on the extent and nature of vegetation to be disposed of.

Most of the burners used during 1944 were mounted on tractor-drawn cane wagons. It was found however that the unit operates much more satisfactorily when placed at a level considerably lower than the surface of the wagon bed. Mounting the burner assembly on a frame attached to the framework of a tractor at a suitable elevation appears to be the best arrangement so far tried.

Ditch Bank Vegetation

No attempt has been made to catalog species of plants commonly found along ditch banks on sugarcane plantations of Louisiana, but in view of the rich and diversified flora of the region the number would no doubt reach several hundreds. Of that number Johnson grass (*Sorghum halepense*) and alligator weed (*Alternanthera philoxeroides*) are, by far, the most serious weed pests in sugarcane fields. The vast majority of the other species seldom if ever invade well cultivated areas. A few others are mildly to strongly competitive with sugarcane. It is considered extremely significant that, normally, neither Johnson grass nor alligator weed seem to be able to intrude upon undisturbed native vegetation on soils of the types ordinarily devoted to sugarcane culture. Well-drained waste areas which have been abandoned for two or three decades are almost invariably dominated by such harmless plants as golden rod (*Solidago sp*); black eyed susan (*Helianthus floridanus*); broom sedge (*Andropogon sp;*) wild verbena (*Verbena brasiliensis*) and Yankee weed (*Erigeron linifolius*).

The conclusion is therefore inescapable that the rapid spread of Johnson grass and alligator weed, first along ditches and from there to cultivated areas observed during the past few decades has been, ironically enough, associated in some way with our current system of attempted *weed control.*

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It is a matter of common knowledge that all species of vegetation will not suffer the same disadvantages from being cut back at a given frequency. Many annuals in advanced stages of growth cannot survive a single cutting back. Some perennials will be soon eradicated by being cut back at intervals of 3 or 4 weeks while others can survive such treatment indefinitely. As a matter of fact the destruction of all superficial growth at a given frequency may actually result in a net benefit to plants of certain categories by eliminating some competitive plants or by greatly retarding growth of others. For instance, on fallow plots flamed at 11-day intervals for 4 months at the Houma Station the prevalence of coco grass (*Cyperus rotundus*) increased five fold. It cannot be assumed of course that this particular weed has been directly benefitted by flaming. The treatment completely eliminated Johnson grass. Removal of the competition from this initially dominant weed species apparently placed coco grass at a net advantage *in spite* of the flaming.

The essential object of the traditional system of ditch-area management has been primarily, to remove impeding plant growth from ditches proper, and secondarily, to clear adjacent open areas of weed growth in the belief that bordering crop rows would be thereby benefited. The "sweeping" or mowing of ditch areas has been done as prompted by apparent need—ordinarily at relatively frequent but irregular intervals during summer months, and infrequently at other times. Because of their extensive systems of underground storage organs, Johnson grass and alligator weed can readily survive such treatment and maintain vigorous growth. On the other hand, agriculturally harmless competitive plants with less extensive underground systems are much more harmfully affected. The net result has been the crowding out of such harmless plants from ditch banks and the accelerated spread of Johnson grass and alligator weed.

Recommendations

As previously mentioned, of the numerous plants which commonly occupy ditch-banks and other waste areas on sugarcane plantations the vast majority do not ordinarily intrude upon well-cultivated areas. It is hopeless to attempt to exclude all vegetation from such areas exposed to full sunlight, therefore in planning a system of ditch-bank management ecological factors related to spread or suppression of individual components of the flora should be carefully considered. It goes without saying that the ideal system should favor harmless plants to the detriment of noxious weeds.

It is too much to expect that a ditch bank heavily infested with Johnson grass or alligator weed can be repopulated with harmless plants without drastic treatment. In such a case, it will be obviously necessary first to clear the area of noxious weeds by some radical treatment such as periodic flaming. Once the infestation has been largely or entirely eradicated, the next step will be to ensure the return of and continued dominance by harmless plants. From a detailed knowledge of growth habits and environmental requirements of important plants inhabiting ditch banks it should be possible to work out a system which will accomplish the ideal objective, i.e., to keep the ditch proper free of impeding vegetation and at the same time foster the survival and spread of harmless ditch bank plants. We should rid ourselves of the notion that cutting back of so-called "weeds" is always desirable. Harmless plants on waste areas should be as much a part of the scheme of things as sugarcane plants on cultivated area.

Cutting back growths of year-round plants such as golden rod and wild verbena during late spring and early summer, may give ditch-banks a trim and neat appearance for the time, but essentially the operation amounts to cultivating Johnson grass or alligator weed if either happens to be present.

Border Row Spacing

The problem of weeds on ditch banks has been greatly intensified by excessively distant spacing of border rows from ditches. Aside from the incidental loss in crop production due to an unnecessarily high percentage of non-producing acreage, wide placement of border rows stimulates the development of plants such as alligator weed and Johnson grass requiring full sunlight for best growth. Under conditions of more closely spaced border rows, some of the less aggressive shade-loving plants are placed in a better competitive position with respect to these noxious weeds.

Because of the obvious importance of border-row placement in any permanent scheme of weed control it is felt that the problem deserves serious attention. In this connection it should be recognized that the cultivation of sugarcane in areas along the ditches presents special problems of varietal selection and cultural procedure. Obviously, ideal "standard practice" for such conditions may be altogether different from that for interior rows of the "cut". It would however be a relatively simple matter to set up in a plantation program a procedure whereby varietal selection and cultivation and harvest of outside rows could be satisfactorily adapted to the special requirements and difficulties of the environment. It should be possible to design implements by means of which a ditch bank row could be satisfactorily cultivated without the necessity of operating the tractor at dangerously close proximity to the ditch. Harvesting could be done by hand if necessary. Production of cane under such conditions would no doubt present some difficulties, but it should be recognized that the substitution of cane plants for weeds might not only lessen the cost of ditch-bank maintenance, but would in addition largely deprive our weed enemies of their "advance bases" along ditch banks, by way of which cultivated areas are generally invaded.

[1] Mr. John C. Burden, Mr. Jules Burgeires, Mr. R. T. Gibbens, Jr., and Mr L. C. Bourgeois, Jr.

Puerto Rican Cane Price

(*Official Release*)

Determination of Fair and Reasonable Prices for 1944-45 *Crop of Puerto Rican Sugarcane*

Pursuant to the provisions of subsection (d) of section 301 of the Sugar Act of 1937, as amended, and Executive Order 9322, issued March 26, 1943, as amended by Executive Order 9334, issued April 19, 1943, the following determination is hereby issued.

Fair and reasonable prices for the 1944-45 *crop of Puerto Rican sugarcane.*—Fair and reasonable prices for the 1944-45 crop of Puerto Rican sugarcane to be paid by processors who, as producers, apply for payment under the Sugar Act of 1937, as amended, shall be not less than those provided for in the "Determination of Fair and Reasonable Prices for the 1943-44 Crop of Puerto Rican Sugarcane," issued March 27, 1944.

Issued this 20th day of January 1945.

ASHLEY SELLERS,
Assistant War Food Administrator.

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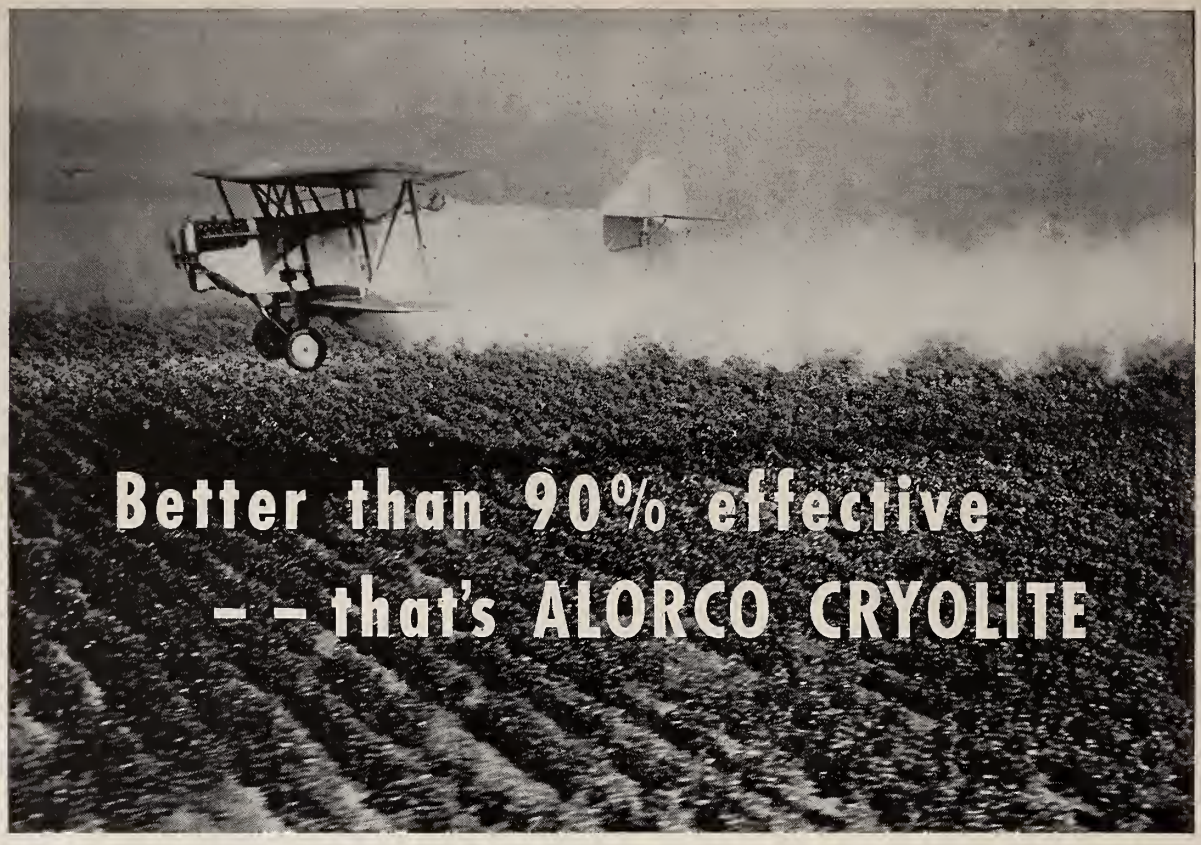

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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against Foreign Competition

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Tropical Islands

(By C. J. Bourg)

In 1942, when the United States was acquiring naval or aviation bases and organizing its defense program, there was a lot of loose talk about having the islands, where the bases were being located, ceded to the United States by Great Britain and France. At that time, the proponents were being guided in their thinking exclusively by the alarms created as a result of enemy military successes in Europe and naval successes in the Atlantic submarine campaign. As the threats passed, the enthusiasm died out, largely.

The conference at San Francisco is bringing up the subject again in the form of suggestions that "trusteeships" be established by major nations over small islands which may be important in the military sense. There are many Americans who feel very strongly about our Americans boys being sacrificed to recapture islands which are to be restored to other nations as part of their empires. It has become evident that a broad-scale planning of national defense, which includes the maintenance of our presently greatly expanded Navy, must provide bases for supplies and communications.

Only in a very limited degree has there been public expression on the new problems which are brought about when a nation accepts the cession of islands or assumes the trusteeship of them. So long as one thinks exclusively about the military needs, his viewpoint is guided largely by the recommendations of experts in military and naval matters. But the American public should force itself to think more comprehensively on the subject by extending their contemplation to include the social and economic obligations and burdens which must be recognized.

Some nations with world-wide empires have been satisfied to look upon these islands as important from the standpoint of exploitation. They are attracted by the cheapness of the raw materials and the absence of a minimum wage or a decent standard of living. The history of the United States demonstrates that the American policy has been exactly the opposite as far as our Government may be concerned. We have not been without capitalists willing to practice personally the scheme of world imperialists.

The whole question calls for profound and thorough thinking. In the United States, we have brought into being great programs of social security, fair labor standards and others, to improve to a higher level our already first-rank standard of living. In fact, these programs are nationalistic. Yet there are many impractical people who want to continue this economic nationalism and at the same time indulge in an extreme international good will. For instance, Congress has established the principle of parity prices for agriculture products. There is now a provision of law which states that the guarantee of parity shall extend two years after peace is declared. High standards of living necessarily bring about high costs of production. It becomes very evident, as one continues to try to think these things through, that we are gradually working ourselves into an impossible situation; unless we are willing to agree that in order to raise the standards of the world we have to lower our own standards.

The question of adding islands to the commonwealth of the United States, so to speak, whether by acquiring the land or by trusteeship over it, cannot be determined by the simple consideration of military ad-

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vantage. *The Saturday Evening Post* has been running a series of articles, beginning with the issue of April 21st, written by a man who has taken the trouble to go into the West Indies and make searching inquiry into the economic and social development, as well as the relationships which have existed between each of the islands and its mother country. This should be required reading for all farmers of the U. S. It is not necessary to agree with the conclusions or the opinions expressed by the author.

It is tremendously important that all American citizens understand the problems, and particularly the farmers or the processors of farm products whose future progress and prospects of continued properity may become directly tied up with the policies concerning islands acquired or accepted under trusteeship. As sugar has been the most attractive crop for exploiting by the foreign investor, we suggest that those interested in the domestic industry keep up with these developments.

Our relationship with Cuba has not amounted to a trusteeship but American investors have taken over the sugar industry of Cuba by more than 65 per cent, according to the Cuban Commissioner of Agriculture.

The benefits claimed for Cubans by the State Department have reached the natives in pitifully small driblets while the major share of the benefits to Cuba have made a boomerang trip back to Wall Street and financial institutions of the eastern states.

This example of imperial practices and exploitation is only one of many.

Diversification and rotation in farming is preached by the U. S. Department of Agriculture every day to every American farmer. But tropical islands are not taught self-sufficiency and are actually not permitted to practice diversification or rotation because it does not suit the plans and schemes of our protected American investors.

Significantly, the *Saturday Evening Post* articles state that the people of Haiti are the poorest but the happiest of all the West Indies Islands, giving as the reason that the natives usually have small farms where they produce their own food and sell the surplus. That statement explains everything. It also permits one to question the practical sincerity of men who claim to feel humanitarian instincts toward island natives while they protect the exploiting investor who profits on peon or serf labor.

A New Weed Killer

From the Quarterly Bulletin of the Louisiana Sugarcane Technologists' Association

Much interest has been aroused by the announcement last summer of results of the herbicidal effects of 2-4 dichlorophenoxy acetic acid. The following summary prepared by Tukey and Hammer, who have done much of the pioneer work is extremely interesting and results of the effect of this weed killer on noxious weeds will be looked forward to with great interest.

A. J. Isacks.

NEW YORK STATE AGRICULTURAL EXPERIMENT STATION
(Cornell University)

"2-4-D" For Weed Control

In answer to your inquiry about weed killers, the new material is an organic compound, 2-4 dichloro-

phenoxy acetic acid, shortened for convenience to "2-4-D". It is easily manufactured, not expensive, and already available in quantity.

Most weed killers depend upon some caustic action to destroy the foliage, whereas this new material induces unfavorable growth responses in the plant which eventually results in its death. The new material represents a *new idea in the principle of weed control* and is not out of the experimental stage.

If you are experimentally minded and wish to try out the material, it may be secured from E. I. DuPont DeNemours and Company, Wilmington, Del; Merck and Company, Rahway, N. J.; the Dow Chemical Company, Midland, Mich.; the American Chemical Company, Ambler, Pa., and the Eastman Kodak Company, Rochester, N. Y. The price is variable and has not yet been established, but it is within reasonable commercial limits.

Much work needs to be done regarding specific recommendations and precautions. At present, the procedure is to use 2-4-D at the rate of 1 part to 1000 parts of water, after first dissolving it in a carrier which, in turn, is soluble in water. The carrier used is a polyethylene gylcol which goes under the trade name of Carbowax 1500 (and which may be secured from Union Carbide and Carbon Corp., 30 East 42nd Street, New York City, at a cost of about 40 cents a pound). Carbowax 1500 is about the consistency of cold cream at ordinary temperatures. For 25 gallons of spray, 3½ ounces of 2-4-D are dissolved in 1 part of warmed and melted Carbowax 1500. The material can be stored in this way for future use. Before mixing with water, it should be warmed and melted. It may be stirred into a gallon or two of water and then mixed with the remainder of the 25 gallons of water, or it may be mixed with the total amount of water at once. If the water is warm, the material handles better and is more effective. Five gallons of spray will treat 1,000 square feet, or 200 gallons for an acre.

To give some idea of the results which have been secured at this Station, the following four tests are briefly described:

Experiment 1.—On July 14, 1944, 3½ acres of bindweed infesting a block of apple nursery stock were sprayed with 2-4-D at the rate of 1 to 1,000 from a knapsack sprayer, using just enough spray to wet the bindweed foliage lightly. The plants took on a dark green color at once, lay flat to the ground, became stiff, and were arrested in development. Flowers did not open. At the same time, the below-ground parts became enlarged and split. Within 10 days they were dead and disintegrating and the above-ground parts dried up and died. The bindweed was affected to a depth of 14 inches and suffered a most severe check. The apple root-stocks were apparently not affected.

Experiment 2.—The material was applied to other plants during July, August and September, also with striking results. For example, sow thistle, narrow-leaved plantain, dandelion, lamb's quarters' round-leaved mallow, chickweed, pigweed, and ragweed were destroyed; pursland, Canada thistle, milkweed, and poison ivy were severly checked. But grasses were in general only slightly if at all affected. The effect on dandelion and narrow-leaved plantain was to produce lengthening and broadening of the base of the leaf until it became ribbon-like, twisted, and whitish. With lamb's quarters, pigweed, and round-leaved mallow, the main stems became bent and split. With sow thistle the below-ground parts proliferated enormously and literally grew themselves to death. With poison ivy the formation of chlorophll was checked, and the plants became chlorotic and weak.

Experiment 3.—Applications were made to Kentucky bluegrass lawn, infested with dandelion, narrow-leaved plantain, white clover, and round-leaved mallow. Applications were made late in August and September. Within 10 days the plantain, dandelion, and mallow were dead and disintegrating and the white clover was killed back to the main stolons, while the blue grass was darker green in color but not otherwise affected.

Experiment 4.—To test the residual effect of the material in the soil, treated areas were seeded to several cereals and turf materials five weeks after treatment. The seed germinated and grew, and the seedlings were apparently not affected.

There is much yet to be learned about 2-4-D. How will the treatments at other seasons of the year than midsummer or fall behave? Will bluegrass be killed then? Will affected plants recover? Is there danger to animals or to health? Will the soil be harmfully affected? How should the material be applied? When should application be made for best results? What concentrations are most effective? These and many other questions yet to be answered emphasize the fact that the material should be used with caution and in a trial way only.

Review of the Food Situation

United States Department of Agriculture
War Food Administration

War Food Administrator Marvin Jones has addressed the following statement to the nation's farmers:

"Review of the whole food situation makes it clear that production in line with the established goals for 1945 is even more important than when the goals were set. The need for continued high-level production is apparent, and the production pattern established by the goals is still the most practical balance for 1945. Nothing is more important in the entire war effort than for farmers to drive ahead with their production schedules, despite wartime handicaps.

Last November the War Food Administration recommended 1945 production goals calling for another year of all out production effort. State by state, farmers and agricultural leaders considered these recommendations and developed their own state goals. The totals of the state goals became the final National goals, which were announced in Janaury.

The 1945 acreage goals total 363,635,000—nearly 3 per cent more than the 1944 planted acreage. The goals also call for increased milk production; for a larger slaughter of beef cattle, and for increased pig farrowing.

A recent survey of farmers' planting intentions shows that they are once more ready to go all-out on the food-production front. In general, prospective plantings are close to the high goal level, and indications are that most of the major crops will be planted in the quantity needed. There are a few spots, however, where special effort will be needed to reach the full goals.

The following facts should be considered by farmers as they plan final steps to bring their production in line with the goals. With the planting season already

under way, time is short and decisions must be made at once:

Oilcrops. It is essential that goals for flax, soybeans and peanuts be fully met. There is a particularly urgent need for large production of these crops in 1945 to meet domestic and export needs next fall and in 1946.

Wheat—Barley and Flaxseed. Prospective production from the large winter wheat plantings, plus the intended spring wheat plantings, indicates that some shifting in spring wheat plans would be desirable. Farmers in spring wheat areas should consider planting some of their intended spring wheat acreage to other needed crops, such as barley and flaxseed.

Potatoes. Production is indicated as below the goal in general farming areas. Additional acreages in commercial production areas are needed to offset these reductions, and an effort should also be made to increase production in the general farming areas. Recently increased requirements for dehydrated potatoes add to the need for continued high level potato production.

Sweet Potatoes. The full goal acreage should be planted. Sweet potatoes have attained a more prominent place in the American diet in recent years and a ready outlet for the 1945 crop is expected.

Dry Beans. Present indications are that production will be well below total requirements. Dry bean plantings up to the production goals are badly needed.

Sugar Beets. Farmers in sugar beet factory areas with land adapted to sugar beet production should consider planting sugar beets up to plant capacity. Present indications are that the amount of sugar available from Cuba will be somewhat less than anticipated, because of poor growing conditions. This makes it all the more necessary that United States farmers plant the full goal acreage.

Feed Grain and Forage Crops. Maximum production of feed grain and forage crops is needed if we are to maintain a safe reserve of feed for increased livestock production. Particular attention should be given to additional acreages of grain sorghums and barley.

Hay and Pasture. Plantings of emergency hay and pasture crops are urged to supplement other needed forage crops, and as insurance against any possible drought.

EDITOR'S NOTE—The request for increased sugar beet acreage is equally applicable to sugarcane for sugar.

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Entries of Sugar From Offshore Areas Through March 31, 1945

(Official Release)

The War Food Administration reports that the quantity of sugar entered for consumption from all offshore areas during January-March amounted to 1,443,571 short tons, raw value. For the corresponding period last year the quantity entered totaled 1,087,149 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 92,758 short tons of sugar, raw value, was marketed by the mainland cane area and 145.486 tons by the continental beet area during January-February, as compared with 133,597 tons and 157,266 tons, respectively, during the same period of 1944.

Area	Quantity entered through March 31 (short tons—96° equivalent)
Cuba	1,256,964
Hawaii	115,600
Puerto Rico	45,017
Foreign Countries other than Cuba	25,990
Total	1,443,571

DIRECT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through March 31.

Area	Quantity entered through March 31		
	Sugar Polarizing 99.8° and above	Sugar Polarizing less than 99.8°	Total
	(short tons, 96° equivalent)		
Cuba	60,750	1,800	62,550
Puerto Rico	3,733	12	3,745
Total	64,483	1,812	66,295

ENTRIES FROM FULL DUTY COUNTRIES

Area	Quantity entered through March 31[1] (pounds)
French west Indies	51,980,917
Tons	25,990

[1] Excluding the first 20,000 pounds entered. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

Preliminary Sugar Statistics for First Three Months of 1945

(Official Release)

Distribution of sugar by the primary distributors in the United States in March and during January-March 1945, compiled from weekly data submitted by distributors, as compared with final figures for the corresponding period of 1944, was as follows:

	1945[1]		1944	
	(short tons, raw value)			
	March	Jan.-March	March	Jan.-March
Refiners	528,184	1,424,159	449,547	1,245,006
Beet Processors	82,969	228,455	94,076	251,342
Importers	33,438	58,601	35,254	85,453
Mainland Cane Mills	4,904	37,183	9,955	52,890
Total	649,495	1,748,398	588,832	1,634,691
Deliveries for Export[2]	45,924	108,212	36,958	124,675
For consumption in continental U. S.	603,571	1,640,186	551,874	1,510,016

Stocks reported by the distributors as of March 31, 1945, as compared with final March 31, 1944 stocks were as follows:

	1945[1]	1944
	(short tons, raw value)	
Refiners raws[3]	331,215	292,114
Refiners refined	88,258	281,419
Beet Processors	531,133	616,610
Importers	15,998	53,120
Mainland Cane Mills	[4]	51,581
Total		1,294,844

[1] Preliminary.
[2] Includes deliveries for liberated areas and lend-lease as well as for military, relief, but excludes usage by U. S. Expeditionary Forces.
[3] Includes 38,170 tons of sugar in Continental U. S. but not reported by refiners as in stocks on March 31, 1944 and a comparable item for 1945.
[4] Data not yet available.

Production of Footings for Low Grade Massecuites Development of New Graining Technique

J. R. Davies and R. D. E. Yearwood, International Sugar Journal—Oct., 1944)

All modern raw cane sugar boiling systems are based on the formation and establishment of a footing of crystal nuclei, the working up of the footing into a low grade massecuite and the mixing of the low grade sugar, after separation of the final molasses, with syrup or "A" Molasses to form a footing for the high grade strikes. Thus in a balanced system, all the shipping sugar originates from one set of granulators.

Until recently, the high purity raw syrups were used for graining by the spontaneous or the shock method. Its disadvantage in that syrup, from which no sucrose has yet been recovered, forms part of the low purity exhaustion strikes. Thus the molasses which forms the other part of the low purity strikes has to be exhausted to a still lower purity, so that, on mixing with syrup, the predetermined purity of massecuite is obtainable.

This involves unnecessary boilings in the pans and usually, excessive recirculation of solids in the effort to control purities. Webre's seeding system overcomes this difficulty because the mother licor to be seeded is 60 purity "A" molasses. No syrup need be by-passed direct to the exhaustion strike. He further claims that by use of his system, the conglomerate content of the final sugar is materially reduced.

In the Gomez modification of Webre's system the 60 purity molasses is grained spontaneously and not seeded. He retains many of the operating advantages of Webre's system without the necessity for equipping the vacuum pan with a mechanical circulator. The type of crystal formed by graining 60 purity molasses is an attractive one from the sugar boiling point of view and is comparatively free from conglomerate and the resulting crystals are regular in size. But the process, like all those of graining in the pan, requires a quick decision by the pan boiler as to when to introduce the check charge. There is no absolute control on the number of grains as in the Webre system.

NADLER FOUNDRY & MACHINE CO.,
Manufacturers and Repairers
of
SUGAR MACHINERY
PLAQUEMINE, LA.

By definition, when molasses is concentrated so that the labile zone of supersaturation is established, crystals of sucrose appear without any further reduction in the water content. This is the basis of the old string proof method, in which low purity molasses are grained at rest in tanks. But if higher purity molasses are used and grain formation is accelerated by stirring, the type of grain formed is similar to that produced in the pan by the Gomez modification. Since no evaporation is taking place the water content is constant and the sucrose solubility relationship are not disturbed. The process can therefore be conducted at any. eprdetermined supersaturation value without fear of causing the widely fluctuating conditions such as occur when graining in a vacuum pan.

The new technique consists of concentrating a molasses of 60 to 70 purity in the pan until the labile zone of supersaturation has been established. It is then struck to a lagged vessel equipped with stirrers which are capable of producing vigorous circulation. If the supersaturation value has been properly chosen, grain will form spontaneously, or shock may be added, if desired. The footing when ready for the pan, contains regular well-formed crystals of .10 to .18 mm. in size depending on the purity and other factors. The entire operation is then conducted at a constant water content, and without utilizing an expensive unit such as a pan with mechanical circulation.

In the Experimental Factory several series of tests were conducted. It was determined that in order to obtain the correct size of crystal after 1 hour stirring and the desirable type of grain, it was necessary to use molasses of about 70 purity.

In order to place the graining process on a scientific basis it is necessary to have a rapid method of obtaining the solubility data on the solution based on the use of the saturascope and refractometer, and simple enough to be placed in the hands of an intelligent assistant.

In the tests most of the molasses encountered was found to grain spontaneously in the pan at 1.80-1.85 supersaturation for 60 purity and 1.70-1.75 for 70 purity. The concentration at which this occurs can then be noted on the refractometer.

It will be found in practice that the solubility data need only be checked periodically, depending on uniformity of the cane supply.

It was found at the Experimental Factory that the saturation-cencentration temperature line on the solubility graph moves to right or left from one year to the next but the angle of slope changes little or not at all.

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It is envisaged that by employing the new technique the graining process can now be placed on a proper scientific basis. It can be put in the hands of a trained laboratory assistant with the necessary equipment. The only requirement of the pan boiler is to strike the mother licor at the point determined by the laboratory assistant into the clean stirring vessel. In practice, there is no reason why the pan boiler should not read the refractometer and solubility chart to determine the correct point for transfer. Suitable laboratory assistance must then be provided to determine and periodically check the solubility data.

E. J. Coons.

Varietal Trend in the Florida Everglades

From the Quarterly Bulletin of The Louisiana Sugarcane Technologists' Association

The following table shows the per cent of total cane acreage planted to various varieties for four seasons out of the past fourteen:

Variety	1931-32	1936-37	1941-42	1944-45
Florida 31-436	----	0.13	27.41	39.51
Florida 31-962	----	0.68	44.66	33.77
Other Florida Seedlings-1932 and earlier	----	11.15	10.95	6.16
United States Sugar Corporation Seedlings (1935 and later)	----	----	0.09	4.92
Canal Point Seedlings-Federal Station	----	9.15	1.03	0.68
P. O. J. 2725	19.36	60.80	12.16	10.35
Other P. O. J. Seedlings	59.02	5.11	0.10	0.29
Co. 281	3.01	5.08	----	----
Co. 290	----	3.25	3.45	4.06
Miscellaneous-(Mostly Crystalina & S.C. 12/4)	18.61	4.65	0.15	0.26

For more detailed information about some of these varieties the reader is referred to an article by Dr. B. A. Bourne in *Facts About Sugar* for December 1940, entitled *Sugar Cane Varieties in Florida.* Dr. Bourne is a present vice-president in charge of Research for the United States Sugar Corporation. The first four groups listed above and part of the fifth were produced by him.

Probably in the immediate future the acreage of F.31-962, other Florida Seedlings, and the P.O.J and Co. Varieties will decrease, being replaced by U.S.S.C and C.P Seedlings.

Mr. J. V. Fourmy has promised to furnish information about the varieties used at Fellsmere, which is not in the part of Florida usually referred to as the Everglades.

By W. P. Jernigan, Asst. Supt., Agriculture
Eastern Division, U. S. Sugar Corp.

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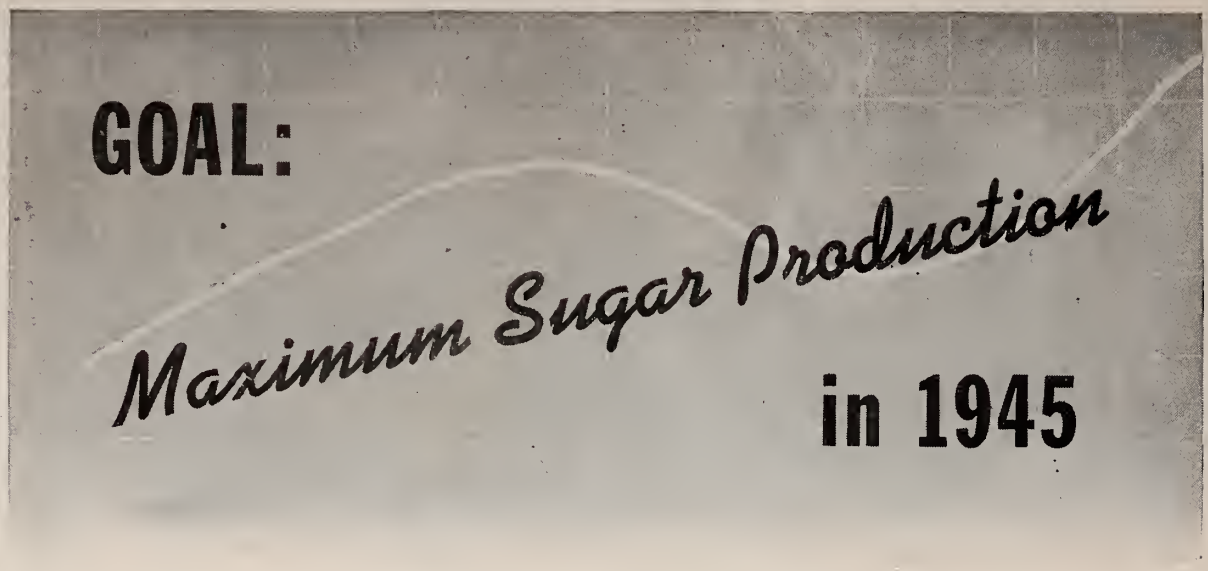

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against Foreign Competition

Vol. 23 NEW ORLEANS, LA., MAY 15, 1945 No. 16

Statement to the Ways and Means Committee

(Doughton Bill—H. R. 2652)

It having been decided to present a joint statement, Mr. Fred G. Taylor, Vice-President of the U S. Beet Sugar Association submitted the following statement with respect to the Doughton Bill (H. R. 2652) on behalf of the members of:

The American Sugar Cane League,
Farmers & Manufacturers Beet Sugar Association,
Hawaiian Sugar Planers Association, and
United States Beet Sugar Association.

These domestic producers of sugar normally supply 40 per cent of the consumption requirements of the United States, and the economic wellbeing of the industry is a matter of importance to each of the 21 States and the Territory of Hawaii where it is established.

The domestic sugar industry renders a significant service in war as well as in peace. In 1942, after the Philippines had been lost and when enemy submarine attacks restricted the volume of sugar shipments from the Caribbean areas, distribution of the large inventories of beet sugar was extended to the Southern and Atlantic States to relieve a situation that otherwise would have been extremely distressing. The domestic cane and beet sugar industry has continued to supply under difficult circumstances a substantial part of our total wartime sugar requirements. In the area between the Mississippi River and the Pacific Coast, all but a fraction of our sugar requirements are being furnished by domestic producers and if this supply had not been available a sugar famine rather than a sugar shortage would have existed there.

The peacetime functions of the industry are no less important. Its operations assure the United States of a diversity in its sources of sugar supply, encourage effective competition among producers, and prevent foreign nations from monopolizing American markets.

Sugar, we believe, presents a special problem in the consideration of the pending legislation because the industry operates under a system of government supervision unique in American agriculture In 1934 Congress first enacted sugar quota legislation which placed controls on the supplies of sugar and since that time there have been four reductions in the rates of duty on sugar. The rates now in effect—and in effect on January 1, 1945—represent a reduction of 50 per cent from the rates prevailing at the time of the approval of the Foreign Trade Agreements Act, and a reduction of 62½ per cent from those specified in the Tariff Act of 1930.

The first of the four reductions, effective June 8, 1934, was made by the President under the flexible provisions of the Tariff Act of 1930. By that action the rate of duty on 96° raw sugar imported from foreign countries other than Cuba was reduced from $2.50 to $1.875 a hundred pounds, and the duty on Cuban 96° raw sugar was cut from $2.00 to $1.50 a hundred. Domestic producers of sugar beets and sugarcane were not, however, left without compensation against the impact of the lower rate of duty. On the same day the President signed the Executive Order reducing the rate of duty he also approved the so-called Jones-Costigan Amendment to the Agricultural Adjustment Act of 1934, which established a system of quotas and specified that a processing tax should be imposed on sugar at a rate not greater than the reduction of the duty. Proceeds of the tax were used

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to make benefit payments to growers of sugar beets and sugarcane so that the protection afforded domestic sugar producers might be maintained and, to quote the President, they might obtain "a fairer return for their product". Except for a brief interval in 1939 quotas remained in effect from 1934 until shortly before the attack which brought the United States into the war, and they have been the principal stabilizing influence in the sugar industry.

The second reduction in duty became effective September 3, 1934, in the reciprocal trade agreement between the United States and the Republic of Cuba Under that agreement the rate of duty on Cuban raw sugar was reduced from $1.50 to $0 90 a hundred pounds. However, the agreement also contained a certain measure of protection for the domestic producer since it provided that the duty would revert to $1.50 a hundred pounds whenever sugar quotas became inoperative. The value of that provision was demonstrated in September of 1939 when, with the outbreak of the war in Europe, it was deemed advisable to suspend quotas temporarily. The duty reverted to $1.50 and continued at that level until the quotas were reinstated on December 26, 1939.

The third reduction in duty came with the proclamation of a supplemental trade agreement with the Republic of Cuba, effective January 5, 1942. In that agreement the rate of duty was reduced from $0.90 to $0.75 a hundred pounds, *and the requirement that a higher rate of duty must prevail when quotas became inoperative was completely eliminated.*

The fourth reduction in the duty was written into the reciprocal trade agreement between the United States and Peru, effective July 29, 1942, which reduced the rate of duty on 96° raw sugar imported from foreign countries other than Cuba from $1.875 to $0.9375 a hundred pounds. The rates of duty in the Peruvian agreement were applicable to all most-favored nations.

The current rates of duty on sugar, considered alone, are wholly inadequate to maintain domestic production.

In recent years differences in costs of production, once a yardstick for measuring tariffs, have been completely ignored. Nevertheless, it is worthwhile to point out that the last investigation by the United States Tariff Commission, completed in 1934, indicated that the difference in costs of production between the United States and Cuba was $1.50 a hundred pounds. In view of higher wage rates, higher taxes, and higher costs of all kinds in all domestic sugar-producing areas, it is a fair assumption that the difference in costs today are greater than they were at the time of the Tariff Commission's study. Yet the enactment of the Doughton Bill would permit a reduction in the rate of duty on Cuban sugar from $0.75 to $0.375 a hundred pounds—the latter amount only 25 per cent of the difference in costs of production, as determined by the Commission, and 18.375 per cent of the rate established by the Tariff Act of 1930.

The need for adequate protection against foreign sugar arises from a number of causes, but greater efficiency on the part of foreign producers is not one of them. Foreign producing areas have advantages in lower wage rates, cheaper land, and lower taxes, but they can claim no superiority over domestic producers either in the yield of sugar per acre or in the utilization of labor. On the contrary, an average acre

of cane or beets in the United States produces as much or more sugar as an acre of cane in Cuba, and the domestic sugar is produced with more efficient use of higher-priced labor. Minimum wages for field labor in the domestic sugar industry are established by the Secretary of Agriculture, and these minimum rates on the average are several times the minimum wages in Cuba. Factory wage rates are subject to the standards established by federal law, and in most cases are far higher than the legal requirements. As an example, minimum wages for unskilled labor in beet sugar factories, operating under union contracts, average 66.5 cents an hour, with arrangements for time-and-one-half for overtime.

In the face of successive reductions in duties, the continued operation of the domestic sugar industry has been possible only becasue of the maintenance of the quota system, now embodied in the Sugar Act of 1937, as amended. The Sugar Act expires on December 31, 1946, and domestic producers have no assurance that it will be continued beyond that date. A further reduction of the tariff in these circumstances—or even a continuation of the present inadequate tariff in the absence of quotas—is a matter of grave concern to the domestic industry. We have, as a consequence, no alternative but to oppose that part of Section 2(a) of the Doughton Bill which authorizes a reduction of 50 per cent in the rates of duty prevailing on January 1, 1945.

Louisiana Wage Rates for 1945

(*Offical Release*)

Determination of Fair and Reasonable Wage Rates for Production and Cultivation of Sugarcane in Louisiana, 1945

Chapter VIII—War Food Administration
(Sugar Regulations)
Part 801 — Sugar Determinations

Pursuant to the provisions of subsection (2) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, and Executive Order No. 9392, issued October 26, 1943, the following determination is hereby issued:

802.24q *Fair and reasonable wage rates for production and cultivation of sugarcane in Louisiana during the calendar year 1945.* The requirements of subsection (b) of section 301 of the Sugar Act of 1937 as amended, shall be deemed to have been met with respect to the production and cultivation of sugarcane in Louisiana during the remainder of the calendar year 1945 (the rate applicable for the period January 1, 1945 to date of this determination shall be those determined for production and cultivation for the calendar year 1944) if all persons employed on the farm during that period in the production and cultivation of sugarcane shall have been paid in full for such work and shall have been paid wages in cash therefor at rates as follows:

(a) *Wage Rates.* The wage rates agreed upon between the producer and the laborer but in no case less than the following:

(1) On a time basis.

(i) For all work except as specified under (ii) and (iii) below:
Adult Males, per 9-hour day.....$2.30
Adult Females, per 9-hour day.....$1.95

(ii) Tractor Drivers, per 9-hour day.....$2.90

(iii) Teamsters, per 9-hour day.....$2.30

(iv) Children between 14 and 16 years of age, per 8-hour day.....$1.75

For a working day longer or shorter than 9 hours for adult workers (or shorter than 8 hours for children between 14 and 16 years) the rate shall be in proportion to the applicable rate prescribed above.

Maximum employment per day for children 14 to 16 years is 8 hours.

(2) *On a piece rate basis.* For all classes of work performed on a piece rate basis the earnings per day (or per hour) shall be not less than the applicable rates per day (or per hour) specified under (1) above: Provided however, That minimum earnings per day (or per hour) shall not apply to prisoners of war but they shall be paid at the same piece rate as other laborers.

(b) *General Provisions.* (1) In addition to the foregoing, the producer shall furnish to the laborer, without charge, the customary perquisites, such as a habitable house, a suitable garden plot with facilities for its cultivation, pasturage for livestock, medical attention and similar incidentals.

(2) The producer shall not, through any subterfuge or device whatsoever reduce the wage rates to laborers below those determined above.

Issued this 5th day of May 1945.

Ashley Sellers,
Assistant War Food Administrator.

Viability of Louisiana Produced Johnson Grass Seed—A Factor In Eradication

By Thomas J. Arceneaux
Dean, College of Agriculture and Professor of Agronomy, Southwestern Louisiana Institute.

In Louisiana, Johnson grass, Andropogon halepensis, is a very extensively distributed plant. This grass has been considered a serious weed, especially in the cane belt; however, its value as a hay plant has long been recognized. In 1898 Killebrew (3) warned the farmers of Tennessee about this grass in the following manner: "If one wishes to raise nothing but hay; if he has no regards for the rights of his neighbors; if he expects never again to grow tillage crops on his farm, then the wisdom of growing Johnson grass may be commended." This pessimistic attitude expressed by Killebrew has given way to the now more optimistic views of many recent workers. In 1934, Akers (1) reports that Johnson grass is the leading hay plant on the limestone soils of Mississippi and that if cut for hay before it produces seeds, a very good quality hay can be produced.

In Louisiana, Johnson grass is still considered more of a pest than a hay plant and while a considerable quantity of hay is produced from it, many farmers are afraid to utilize such hay for fear of spreading seeds on the farm. That until recently, Johnson grass had never attracted much attention from the Louisiana agronomists is evident from the scarcity of publications relative to its value as a forage plant or to its danger as a weed

The recent work of George Arceneaux and Leo Hebert (2) on control methods is indicative of the atten-

tion this plant is now receiving as a serious weed in the cane area.

Perkins (4) in 1916 published an extensive circular on Johnson grass, "Not with the object of encouraging the general planting of this grass in Louisiana, but with the hope of giving some assistance to those who already have the grass on their land, by calling attention to the value of the grass as a forage plant, and the ease with which it may be controlled so that it may be made a source of profit." The same writer states in his publication that Johnson grass rarely matures good seed in Louisiana. This opinion is shared by many farmers, especially by those in the extreme southern section of the state.

It was the lack of definite information on the germination of locally produced seed that prompted the writer to investigate the common observation that Johnson grass rarely produces viable seed in southern Louisiana. For that purpose representative seed samples from different sections of the state were tested for viability over a seven-year period.

Preliminary germination tests were conducted in 1937. In 1938, a thorough test on the viability of locally produced seed was conducted by H. Young then a graduate student at Louisiana State University working under the direction of the writer. These germination tests were included by Young, together with other data on Johnson grass, to form the basis of a thesis presented in partial fulfillment of the requirements for the degree of Master of Science. This thesis by Young (5) is on file in the library of Louisiana State University. The results of these seven years of germination studies, including the results for 1938 by Young and the writer, are presented in summary form in the following table:

Percentage Germination of Louisiana and Commercial Johnson Grass Seed*

SOURCE OF SEED	1938	1939	1940	1941	1942	1943	1944
North Louisiana							
1. Caddo Parish	25.0	21.0	17.1	20.6	26.3	30.0	18.2
2. Caldwell Parish	6.7	18.1	21.2	17.0	27.2		20.1
3. Webster Parish	18.5			19.0	23.0		
4. Winn Parish		27.0	19.2	21.2	25.1	26.0	
Central Louisiana							
1. Natchitoches Parish	15.4	16.2	16.2	19.0	17.3	21.0	18.0
2. Rapides Parish	16.0	14.5	18.1	20.1	18.0	21.0	20.2
3. Lasalle Parish			15.2	21.0			
4. Concordia Parish		19.2	17.0			27.0	
South Louisiana							
1. Ascension Parish	1.20	0.15	0.21	0.01	0.90	8.0	0.20
2. Assumption Parish	0.13	0.12	0.15	0.32	0.23	15.4	0.15
3. Cameron Parish	0.93	0.00	0.42	0.40	0.00	14.0	
4. East Baton Rouge	1.33	0.60	0.35	0.90	1.10	13.0	0.27
5. Iberville Parish		0.68	0.71	0.60	0.25	21.0	
6. Jefferson Parish	0.00	0.18	0.20	0.17	0.15		0.70
7. Lafayette Parish	0.13	1.00	0.22	0.19	0.80	22.0	0.17
8. Lafourche Parish	0.40	0.80	0.12	0.42	0.32		0.22
9. Terrebonne Parish	1.46	0.40	1.40	0.90	0.33	17.6	0.92
10. Vermilion Parish	0.00	0.50	0.50	0.42	0.62	28.0	0.19
1. Commercial Seed	55.9			62.2		58.1	

*Each percentage is based on average of four or more samples.

Discussions and Conclusions

The results presented show conclusively that Louisiana produced Johnson grass seed, and especially south Louisiana seed, is exceedingly low in viability as compared to commercial seed produced in the drier regions of the country. On the basis of all results, with the exception of the 1943 data, it would seem safe to assume that infestation from locally produced seed should be almost negligible in the cane belt

The exact cause or causes of poor seed formation is beyond the scope of this problem, but it is very evident that poor seed formation is positively correlated with high humidity. Examinations revealed that the pollen grains germinated very rapidly in contact with moisture. Such a response is ordinarily associated with poor fertilization and a correspondingly poor seed development in many plants grown under humid conditions. This conclusion is further substantiated by the fact that there is an increase in germination of central and north Louisiana seeds over those from the extreme southern section of the state. Information from the climatic summary of the United States Weather Bureau, U. S. D. A., shows that both humidity and precipitation are lower in northern and central Louisiana than in extreme southern portions of the state. It, therefore, seems safe to assume that poor seed developmnet ordinarily obtained in the cane belt is definitely associated with high humidity and while poor seed formation, as shown by this study, represents the normal or average condition, the results obtained in 1943 indicate that, occasionally at least, the production of high percentage of viable seed may be expected. While no definite data relative to climatic and other factors contributing to this exceptional seed development are available, these results establish the fact that we may, in the cane belt, occasionally expect a large crop of viable seed. This situation greatly complicates the eradication problem, since land completely rid of rhizomes may, as a result of these seeds, become again rapidly infested.

It may, therefore, be concluded that in the cane belt of Louisiana, infestation from locally produced seed is, on the average, negligible due to the low viability of the seed The results show, however, that, occasionally at least, conditions are such as to promote the development of an abundant seed crop of fully developed and highly viable seed. It is suggested that a knowledge of the viability of the seed crop should provide valuable information in planning control measures. For that reason, the College of Agriculture at Southwestern plans to continue obtaining such information with the cooperation of county agents, who have agreed to collect representative samples for annual germination tests. The results of these tests will be made available to the planters.

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Sugar Research

By C. W. Stewart
Superintendent of the Audubon Sugar Factory

The Audubon Sugar Factory has continued its long record of service to the sugar industries of the state by offering large-scale pilot plant facilities for the manufacture of sugar and its by-products. Two commercial organizations, the American Cyanamid and Chemical Corporation and the J. J. Naugle Laboratories have taken advantage of the factory facilities by carrying out research programs this past grinding season.

The American Cyanamid and Chemical Corporation has investigated the application of that new tool of chemical purification—ion exchange and removal. The new process produces a high grade syrup and direct consumption sugar without the conventional liming, heating, clarification, filtration, and subsequent refining operations necessary for producing refined sugar from raw product. Although information on the details of the procedure and its economic feasibility are not yet available, the process will bear watching because of its far-reaching implication for the sugar industry.

The J. J. Naugle Laboratories have investigated the defecation of cane juice with a new material. The process produced a high grade syrup and sugar without the full temperature rise required in conventional liming and without the usual stage of clarification. Here again information on the details of the procedure and its economic feasibility are not yet available.

The following information represents a summary of experimental data obtained at Audubon Sugar Factory this past grinding season.

The effect of trash on the grinding rate and on the purity drop between crusher juice and mixed juice were noted when grinding clean and trashy cane. In our tests the grinding rate was reduced about 16% when the trash was 11-12% by weight. The purity drop between crusher and mixed juice was 1.72% when grinding clean cane and 4.40% when grinding trashy cane. These results are the average of four tests made on different days during the past season and are indicative of the results obtained in milling trashy cane.

A test was made to show the effect green tops have on the sucrose content of cane. The cane was cut at the bud or spread of the leaves and cleaned. Twelve inches were cut from the top of all the stalks tested (about 60); the juice was tested and found to contain about 0.37% sucrose. Another twelve inches was cut off and tested; this portion showed 2.37% sucrose. The remainder of the cane analyzed 12.81% sucrose. By a mathematical average the whole cane showed 11.18% sucrose; with the first 12 inches removed, the result was 11.61% sucrose. On a basis of standard cane the entire stalk showing 11.18% sucrose, equals 94.00% standard cane; whereas the stalk, less one foot, showing 11.61% sucrose, equals 100.00% standard cane.

A milling test was made using the J. J. Munson cross groove on the top roll of the third mill and some interesting results were obtained. The rolls used in this mill were the test rolls purchased by the American Sugar Cane League. At the beginning of the season they were put into the mill with one-quarter-inch pitch circular grooving. They were used for two weeks and gave considerable trouble from choking. The bagasse showed 3.14% sucrose and the sucrose extraction was 89.14%. At the end of the two weeks the regular rolls with one-half-inch grooves were installed. The only improvement noticed was fewer chokes; the mill work was about the same. A few days before the end of the season the test rolls were put back in the mill. The top one had the Munson cross grooves cut in it. No choking occurred and there was a decided improvement in mill work. The bagasse showed a 2.46% sucrose and sucrose extraction was 91.82%. — *Engineering Experiment Station News.*

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Sugar Beet Farming Practices

(*Official Release*)

Determination of Farming Practices in Connection with Production of Sugar Beets

Pursuant to the provisions of subsection (e) of section 301 of the Sugar Act of 1937, as amended, Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, and Executive Order No. 9392, issued October 28, 1943, the following determination is hereby issued:

Farming practice in connection with the production of sugar beets. The requirements of subsection (e) of section 301 of the Sugar Act of 1937, as amended, shall be deemed to have been fulfilled with respect to the production of the 1945 or any subsequent crop of sugar beets on any farm if soil-conserving practices are carried out in connection with the production of such crop in a manner and to the extent required for the 1944 crop under the "Determination of Farming Practices to be Carried Out on Farms in Connection with the Production of Sugar Beets during the Crop Year 1944," issued February 28, 1944, and if certification thereto is made in the manner prescribed in such determination. In applying such determination to the 1945 and subsequent crops, all calendar and crop years mentioned therein shall be increased one year for the 1945 crop and by one additional year for each subsequent crop.

Issued this 3d day of March 1945

ASHLEY SELLERS,
Assistant War Food Administrator.

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Virgin Islands Sugarcane Price

(Official Release)

Determination of Fair and Reasonable Prices for 1945 Crop of Virgin Islands Sugarcane.

Pursuant to the provisions of subsection (d) of section 301 of the Sugar Act of 1937, as amended, Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable prices for the 1945 *crop of Virgin Islands sugarcane.*—Processors who, as producers, apply for payment under the Sugar Act of 1937, as amended, shall be deemed to have complied with the provisions of section 301 (d) of said act, if the requirements specified below have been met:

(a) Purchased sugarcane is paid for at the rate of not less than the f. o. b. mill value of 6 pounds of 96° raw sugar per hundredweight of such sugarcane when the average quantity of such sugar recovered for the season represents less than 10% of the weight of such sugarcane; 63% of the f. o. b. mill value of the quantity of 96° raw sugar recovered when the average quantity of such sugar represents 10% or more but less than 12% of the weight of such sugarcane; and 65% of the f. o. b. mill value of the quantity of 96° raw sugar recovered when the quantity of such sugar recovered represents 12% or more of the weight of such sugarcane. The average New York price of 96° raw sugar, for the week (or such other period as may be agreed upon) in which sugarcane was delivered, less all costs involved in the marketing of such sugar (other than bags and bagging, storage in company warehouses, war risk insurance, or any item of expense incurred in the marketing of such sugar which is reimbursed in whole or in part by the federal government or any agency thereof) shall be deemed as the f. o. b. mill value of such sugar.

(b) There is paid, per hundredweight of purchased sugarcane, an amount equal to one-half of the excess, if any, of the net proceeds derived from the sale of blackstrap molasses produced from a hundredweight of sugarcane of the 1944 crop over the net proceeds from the sale of blackstrap molasses produced from a hundredweight of sugarcane from the 1941 crop.

Issued this 20th day of February 1945

ASHLEY SELLERS,
Assistant War Food Administrator.

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Hawaiian Wage Rates

(*Official Release*)

Determination of Fair and Reasonable Wage Rates for Persons Employed in Production, Cultivation, or Harvesting of Sugarcane in Hawaii During the Calendar Year 1945.

Pursuant to the provisions of subsection (b) of section 301 of the Sugar Act of 1937, as amended, Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, and Executive Order No. 9392, issued October 28, 1943, the following determination is hereby issued:

Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in Hawaii during the calendar year 1945. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the production, cultivation, or harvesting of sugarcane in Hawaii during the calendar year 1945, if all persons employed on the farm during that period in the production, cultivation, or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefore at rates not less than the following:

(a) *For all work performed on a time basis.*

Rate per hour for each worker:

	Nonharvesting operations (per hour)	Harvesting operations (per hour)
	Cents	Cents
Adult males	25.0	30.0
Adult females	20.0	22.5
Children 14-16 years of age[1]	20.0	20.0

[1] Maximum employment of such children not to exceed 8 hours per day.

(b) *For all work performed on a piece rate basis.*

The applicable piece rate for any operation shall be at the rate agreed upon between the producer and the laborer but in no instance shall the average hourly earnings resulting from such agreed upon rate be less than the applicable hourly rate provided in paragraph (a). Piece rates for adult women and children 14 to 16 years of age shall be the same as for adult males for comparable work.

(c) *General provisions.* (1) If the producer and laborer agree upon a wage for any operation, or combination of operations, higher than that prescribed in this determination, payment in full of the amount agreed upon must be made to qualify the producer for payment.

(2) In addition to the foregoing wages of this determination, the producer shall furnish the laborer without charge, the perquisites customarily furnished by him, such as a house, garden plot, and similar incidentals, unless the furnishing of such is restricted by military authority.

(3) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined above.

Issued this 26th day of February 1945.

ASHLEY SELLERS,
Assistant War Food Administrator.

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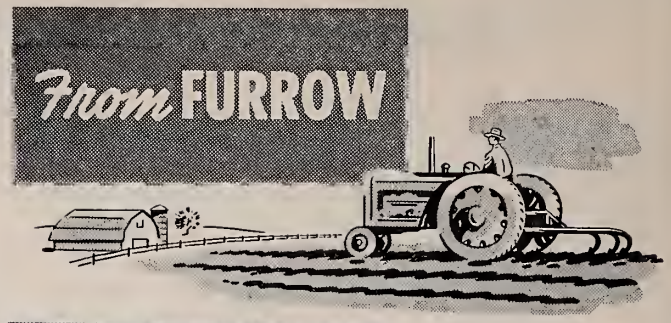

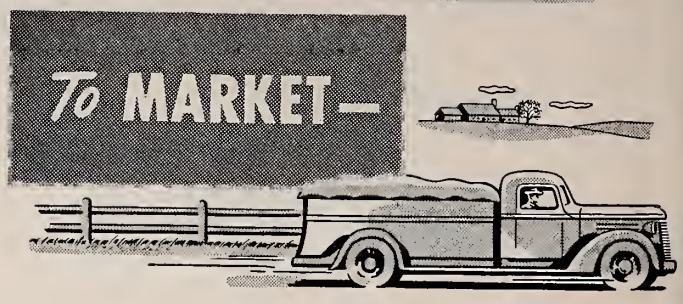

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THE SUGAR BULLETIN

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Vol. 23 NEW ORLEANS, LA., JUNE 1, 1945 No. 17

The Sugar Situation

By C. J. Bourg

The House Committee Investigating Food Shortages, of which Congressman Clinton P. Anderson of New Mexico is chairman, has been devoting considerable time to the sugar shortage. While it has investigated rather thoroughly the reasons for the shortage, the Committee has gone considerably farther than is usual for a Congressional Committee. In addition to bringing out the facts, the Committee is following-through to relieve the shortage, to overcome it eventually, and to provide against repetition.

The following recommendations have been submitted by the Committee, and we already have direct evidence of its interest in knowing to what extent action is being taken upon them:

1. *Establish authority and responsibility for procurement, transportation pricing, and distribution under one coordinating head.*
2. Open negotiations immediately for the purchase of the 1946 Cuban and Puerto Rican sugar crops.
3. Provide Hawaii with heavy type machinery such as crawler cranes and front axle drive trucks for sugar production.
4. *Provide adequate machinery, supplies, and labor for domestic beet and cane areas by fullest cooperation between War Food Administration, War Manpower Commission, War Production Board, and the War Department.*
5. Make available to friendly European countries that are in short supply for plantings in the spring of 1946 our surplus beet seed. Consideration should be given to the substitution of other carbohydrates particularly cereals for part of the sugar now tentatively allocated to them.
6. Encourage the production of corn sugar and sirups in 1945.
7. Tighten rationing controls so that allocation will not be exceeded.
8. Establish a minimum figure below which the supply of sugar for United States civilian use will not be allowed to fall.
9. Re-examine allotments made to different classes of industrial users.
10. Review all foreign commitments and adjust to safeguard minimum allotments for United States civilian use.
11. Make public all commitments and allocations, domestic and foreign, with explanatory supporting data.

Chairman Becomes Secretary and Administrator

An extraordinary development has taken place, in that the President of the United States announced this week the appointment of Congressman Anderson to be Secretary of Agriculture, with the understanding that he will also become the War Food Administrator after June 30. In effect, Secretary Anderson will be in a position to supervise the carrying out of his own Committee's recommendations. The very favorable impression made by Mr. Anderson as Chairman of the Committee, both when presiding at the hearings and in the preparation of the excellent report on the sugar situation, creates a very encouraging prospect for Government policy on sugar during the war and in the future.

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12
MARCEL J. VOORHIES, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

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The Louisiana Sugar Planters' Assn.
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Needs of the Louisiana Industry

As the Committee had asked your Washington representative to keep it informed on matters wherein the Committee might help to obtain a maximum production in 1945 and an increased production in 1946, the following letter has been submitted.

May 25, 1945

The Honorable
Clinton P. Anderson
Chairman, House Committee
Investigating Food Shortages
House Office Building
Washington, D. C.

Dear Congressman:

Availing ourselves of the request of your Committee to inform you of the needs of the domestic sugar industry to obtain a maximum production of sugar in 1945 and to increase production in 1946, we respectfully submit the facts.

Louisiana sugarcane growers have increased their acreage to the extent that a production of 450,000 tons of sugar is estimated for 1945. The saving of this crop is dependent upon adequate labor and a maximum number of mechanical harvesters and loaders. In turn, the sugar processing plants need labor, replacement and maintenance work to bring them to the highest efficiency to insure the processing of all growing sugarcane prior to the mid-winter weather hazards.

Analyzing the farm equpiment required, there is need in the highest degree for high-lug tires which are the only type that can be used constantly in the soft soils of Louisiana during any type of weather. These high-lug tires are needed for tractors, trucks, harvesters and loaders. Other types of truck tires are likewise essential to the delivery of cane to the mill.

The reports that the War Production Board is permitting the production of civilian automobiles in 1945 emphasizes the practical possibility of a major contribution to all farming and food processing operations. As you are interested in the production of all foods, we know of no immediate relief that would be so effective as to prevail upon WPB and the manufacturers of motors vehicles to concentrate primarily on the manufacture of trucks and tractors. This could be done with the least upset because it would not mean diversion but rather temporary postponement of the quantity of passenger cars available for civilian use.

In the case of loaders, WPB is permitting a limited number to be manufactured but only with steel rim wheels although our experience has demonstrated that high-lug tires are needed for proper tractor under all weather conditions.

With respect to labor, the situation is satisfactory during the cultivation season and some arrangements are already being made for the harvest. However, preliminary figures for the assignment of war prisoners to the harvesting of Louisiana cane are considerably under actual needs. Labor requirements could be reduced some by liberalizing WPB restrictions with regard to harvesters, loaders and high-lug tires. But the present prospects are that Louisiana will depend greatly upon an increased number of prisoners being assigned to the harvesting of the 1945 crop.

As I explained to your Committee on the witness stand, the ceiling price on raw sugar was established in January 1942, based on 1941 costs. Protests have been filed with the Office of Price Administration by processors requesting that the ceiling price be improved, otherwise processors will continue to suffer money losses as the majority did on the processing operations of 1944. In addition, the processors have requested and are receiving the consideration of the Commodity Credit Corporation with a view to providing an incentive to adjust cost and to avoid losses. Because of the sugar shortage, the War Food Administration is applying extraordinary measures to the marketing of Louisiana raw sugars, involving new problems and costs, which call for adjustments. Prompt action by OPA and CCC will stimulate the repair and maintenance program this summer to have processing machinery at highest efficiency for harvesting operations.

The first recommendation of the very thorough and constructive report of your Committee on "The Sugar Situation" calls for the establishment of one coordinating head with authority and responsibility. The authority given such an official is much more important than any other consideration, because in our experience, co-ordination among Government agencies in sugar matters requires positive determination and action, since cooperation among them has never been achieved and is seemingly impossible. May we express the hope that the official so designated shall be one who advocates encouragement of domestic sugar production and reasonable income under war conditions.

The fairness, the judgment, and the follow-through for prompt action to assist domestic production, demonstrated by you as Chairman of the Committee, convinces and assures us of the complete success that we wish you as Secretary of Agriculture and War Food Administrator.

Respectfully submitted,
Signed *C. J. Bourg.*

Important Correspondence on State Department Policy

May 18, 1945

The Honorable William L. Clayton
Assistant Secretary of State for Economic Affairs
Department of State
Washington, D. C.

Dear Mr. Secretary:

In further reference to the matter that I discussed with you last week relating to the question of giving the sugar industry the same assurances that were given to them originally when we first passed the Reciprocal Trade Agreements Act, and you had informed me that you would be most pleased to go into this subject and ascertain the facts and that you would be agreeable to discussing the matter with the representative of the American Sugar Cane League, Mr. Clarence J. Bourg—and you kindly fixed the time for an appointment with Mr. Bourg, I am advised that Mr. Bourg has had several pleasant conferences with you and Mr. Charles Taft and the matter has been fully explored.

Mr. Bourg has suggested that I advise you in a letter of the situation as we understand it, which is as follows.

There are several questions regarding which the sugar industry and I would like to have official information and assurances.

(1) In the trade agreement with Cuba of 1934, there was included "a note" which stated that when the quota provisions of the Sugar Act become inoperative, the duty on sugar would revert to the duty imposed at the time of the signature of that agreement. Such provision had been inserted at the request of the domestic producers and was very reassuring to them to the extent that it recognized officially the concurrence of tariff reduction and the protection afforded by quotas. No explanation has been given for the elimination of this provision in subsequent agreements with Cuba. Will the Department of State explain the elimination and will the Department of State agree to restore such provision when the Cuban agreement is extended or amended?

(2) The international sugar agreement contains a provision which has the effect of perpetuating that provision of the Sugar Act which allocates to foreign countries, other than Cuba, any deficit in the quota of the Philippine Islands. The industry views with concern any action of the Department of State which seeks to create a moral commitment on the part of the United States Government with respect to the provisions of an Act of Congress. Naturally the sugar industry feels that Congress should be completely free from commitments arrived at by international negotiators in matters such as the provision of the Sugar Act. The sugar industry and I do not construe such commitments to be a legal restraint on the powers of Congress to legislate but such commitments do tend to create misunderstandings. Would the Department of State be agreeable to giving the assurance that negotiations with respect to a commodity like sugar, the production and distribution of which is controlled under the provision of the Sugar Act, shall not create moral commitments beyond the provision of the Act of Congress and subject to amendments or extensions by Congress?

(3) The domestic sugar industry is convinced that under conditions which have existed since 1934, the quota system offers a practical means of protection and equalization of sugar distribution in the United States market from normal sources of supply. Will you write me a reassuring statement of Department policy in this regard?

Assuring you that I will appreciate a prompt reply, and thanking you for the courtesies extended to Mr. Bourg, I am

Sincerely,
Signed *Paul H. Maloney*

May 24, 1945

My dear Mr. Maloney:

This will ackowledge receipt of your letter of May 18th, in which you ask certain questions about the attitude of the State Department in connection with the sugar industry.

1. With regard to your first question, you are correct that by the provisons of the original trade agreement with Cuba in 1934, the duty on Cuban sugar would revert to the rate of $1.50 per hundred pounds if the quota provisions of the 1934 sugar legislation became inoperative.

When the war broke out in September 1939, the quota provisions of the Sugar Act of 1937 were sus-

pended because of the emergency. Under the then-existing provisions of the Cuban trade agreement the duty on Cuban sugar was increased to $1.50. For a period of about three months, therefore, when sugar was greatly in demand, consumers were forced to bear this extra charge, and it was this situation which led to the negotiation of the first supplementary trade agreement with Cuba, effective December 23, 1939, which resulted in a provision whereby if the quota provisions were suspended, the rate of duty would not increase, but if the Sugar Act expired, the rate would revert to $1.50. Then, as you say, the second supplementary agreement with Cuba was concluded, effective January 5, 1942, which eliminated the relation between quota provisions and the rate of duty on Cuban sugar.

In return for the elimination of that provision and other concessions to Cuba, the United States received a considerable number of concessions of value from Cuba. Also, it was desired clearly to prevent a repetition of the situation in the fall of 1939 referred to above. It was believed that this action in no way endangered the domestic sugar industry, for the sugar quota legislation had been renewed and it was anticipated that with the end of the period of sugar shortages, the quota provisions would be restored. The provisions of the Cuban trade agreement, of course, in no way prevented the resumption of quotas.

The point which seemed to disturb Mr. Bourg was that this action, coupled with Mr. Haley's recent speech outlining our policy regarding commodity agreements and pointing out that control schemes had often in the past been turned into instruments of monopolistic abuse, indicated that the Department would oppose the continuance of the Sugar Act, with its quota provisions. This is not the case. When the Sugar Act was renewed in 1944 the Department stated that it had no objection to its renewal, and our position in this regard remains unchanged. I cannot make any commitment as to our position on the amounts of the quotas in any future renewal, which is a matter for Congress to determine after hearing all of the appropriate testimony. These statements I believe also answer your third question.

2. In your second question you describe the concern which the domestic sugar industry feels about the provision in the International Sugar Agreement which allocates to foreign countries other than Cuba any deficit in the quota of the Philippine Islands. You ask to be assured that any further negotiations with respect to this provision will not be such as to create misunderstandings concerning the power of Congress to legislate on the subject. I am very glad to give you such assurance.

As you know, the 1944 protocol extending the International Sugar Agreement until August 1945 specifically provides that those chapters of the Agreement which set forth the obligations of countries not exporting to the free market shall be inoperative, as shall also be the provisions regarding stocks and export quotas. The Department of State now plans to recommend that the Agreement should again be extended for one or possibly two years beyond August 1945 but subject to the same reservations as are contained in the existing protocol, that is with the provisions about which you are concerned remaining dormant.

Since the Agreement is subject to renewal at short intervals it will be possible at all times to relate it to any changes that the Congress sees fit to make in domestic legislation. The Department considers itself bound to conduct the negotiations affecting any such agreement consistently with the policies laid down by the Congress and on terms which assure that there will be no misunderstanding as to the Congressional authority to act in the matter.

Sincerly yours,
Signed *W. L. Clayton,*
Assistant Secretary

National Fertilizer Policy

In a report entitled *Fertilizers in the Postwar National Economy,* the National Planning Association recently called attention to the need for developing a sound national policy on fertilizers. The report was submited to the Association by its Agriculture Committee on National Policy, made up of representatives of producers, farm organizations, and the food processing industry, and headed by Dr. Theodore W. Schultz, Professor of Agricultural Economics at the University of Chicago.

"Fertilizers, because of their effectiveness in increasing efficient farm operations, maintaining soil fertility, and encouraging soil conservation, contribute importantly to a stable agriculture," states E. J. Coil, Executive Director of the Association, in releasing the report. "A prosperous agriculture," he continues, "is, in turn, important to industry and labor. Because of these far-reaching effects on our national economy, the Agriculture Committee believes it appropriate that the National Planning Association and the American public give careful consideration to procedures which might be adopted for increasing the effective and profitable use of fertilizers."

The Committee's recommendations on national policy call for:

1. Production of commercial fertilizers by private industry, including farm cooperatives, provided competition is effective in protecting the public interest.

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(Ten members of the Committee have approved a footnote recommending that the Government enforce low-price policy by operation of "yard stick" fertilizer plants in case there is not sufficient competition to protect the public interest.)

2. Imports of fertilizers free of duty and on the basis of fair international competition.

3. Distribution of fertilizers through regular industry distribution channels, including farmer cooperatives.

4. Limitation of subsidies which may be paid for the use of fertilizers to soil-conserving practices. Such subsidies should be handled as to establish fertilizer use on an economic basis which will encourage continuation of the desired practices without a subsidy wherever possible.

NOTICE OF MEETING

A meeting of the Contact Committee of the American Sugar Cane League with the staffs of the Baton Rouge and Houma experiment stations, to which the entire Louisiana sugar industry is invited, has been called by Mr. Stephen C. Munson, Chairman of the Contact Committee, for Thursday, June 14th, at the Field Station in Houma, beginning at 9:30 A. M.

Dr. E. W. Brandes will attend this meeting, at which new varieties and other interesting subjects will be discussed. The Time is 9:30 A. M. The Day, Thursday, June 14, and the Place the Federal Field Station at Houma.

5. Government assistance in evaluating potash and phosphate resources and in conducting research on new and improved processes for the production of fertilizers.

6. Continued and increased public support for research and education on fertilizer use.

7. Government attention and action directed toward ways and means of insuring adequate markets and prices for farm products.

8. Adoption of policies to lower plant food costs.

As a basis for making its recommendations, the Committee has studied, and presents in the report, extensive data on fertilizer consumption in the past, domestic resources and production capacity, probable postwar demand, and other factors which have a bearing on developing a national policy.

The increased yield resulting from the use of 12 millions tons of fertilizer in 1944 accounted for about 20 per cent of our total crop production, the analysis reveals. Large and important regions of the United States depend on the extensive use of fertilizers for a successful agriculture and a healthy over-all economy. Among the factors influencing farm income and agricultural welfare, soil fertility is basic. Successful crop production depends on having soils well supplied with the nutrients and elements essential for plant growth. If these nutrients are deficient, crop yields are low, net farm income is usually small, and the general welfare is depressed. The place of fertilizers in the agricultural economy of the individual states is indicated in tables and charts of the report showing the proportion of the crop value attributable to the use of fertilizer.

The proper use of fertilizer also makes a significant contribution to agricultural welfare by its effectiveness in reducing soil erosion. The Agriculture Committee points out that fertilizers and lime may be effectively used for this purpose in at least two ways. First, they may be used on grass or other cover crops to promote rapid or denser vegetative cover, which reduces erosion by binding the soil, slowing run-off and increasing the infiltration of rainfall. In the second place, by increasing crop yields on the less erodible land of a farm, they reduce the need for cultivating easily erodible land. This land can then be placed in pasture or other crops for control erosion.

Fertilizer expenditures in the past have been closely correlated with farm income. The Committee's estimates of future demand for fertilizers, therefore, are based on assumptions regarding the potential cash farm income and prices of fertilizer.

The total farm income from the sale of crops in 1944 is estimated to have been 8.85 billion dollars. The report asserts that "it seems improbable that this high level of income will be maintained." However, the extent of the expected decline in crop production and in prices cannot be predicted. Therefore, for the purpose of making estimates of commercial requirements of fertilizer, the Agriculture Committee has used three different income levels: 8, 6, and 4 billion dollars. At the close of the war, the report estimates, fertilizer prices will approach, in general, the level of 1940 (although nitrogen may be somewhat lower).

On the basis of these assumptions, the report estimates that commercial demand for fertilizers after the war will be 13.2, 10.4 and 7.4 million tons, respectively, at a cost of 432, 325 and 218 million dollars.

The Committee estimates that in addition approximately 10 million tons of fertilizer could be used to increase the yields of crops such as corn, cotton, grain, hay and pastures, which heretofore have often been produced at the cost of soil depletion while fertilizers were used on higher acre value crops. Through fertilization, production of these crops could be geared

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to the demand for them; increased yields on one part of the farm would reduce the need for cultivating easily erodible land; and the latter could then be placed in pasture or other crops that would control erosion.

American resources of the three important plant nutrients—nitrogen, phosphoric acid, and potash—differ widely, the analysis reveals. The development of synthetic ammonia or nitrogen fixation processes and plants gives the United States almost unlimited nitrogen resources. Our indicated reserves of phosphate rock would last more than 2,000 years at our current rate of consumption, and the report recommends that exports to nations without adequate phosphate resources be continued. American potash reserves, even though they have been developed rapidly during the past few years, are still less than 2 per cent of the total world reserves and constitute only about 100 years' supply at our current rate of production. These limited resources should be used wisely, the report warns, and measures should be taken by industry and government to discover and evaluate additional deposits.

United States production capacity of the three essential nutrients is in excess of anticipated commercial demand even if farm income remains at the current high level. Under an 8 billion dollar farm income, the analysis estimates, the commercial demand for nitrogen would be 764,000 tons; phosphoric acid 1,318,000 tons, and potash, 764,000 tons.

The Agriculture Committee recommends that government synthetic ammonia plants with an annual capacity of 200,000 to 300,000 tons of nitrogen should be sold or leased to private industry, increasing the total private capacity to almost 900,000 tons of chemical nitrogen. Other government synthetic ammonia plants would be retained as a part of our military equipment or for future sale or lease if need arises. Imports of 150,000 to 250,000 tons are probable under conditions of high consumption, the analysis estimates, and should be duty free and competitive with domestic products of private industry. The total supply of approximately 1,100,000 tons would furnish the estimated demand for fertilizer nitrogen, an estimated 300,000 tons needed for industrial consumption, and the prewar level of about 50,000 tons for export.

United States production capacity of superphosphate in 1944 was 1,790,000 tons, expressed in terms of phosphoric acids, which is considerably in excess of the anticipated commercial demand. However, the report points out the probable need for additional production facilities in regions of rapidly expanding consumption,

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such as the Pacific Coast, Intermountain, and West North Central regions.

American production of potash in 1944 is estimated at 825,000 tons of K_2O, which enabled us to supply substantial quantities to Allied Nations. However, because of the limited domestic resources, the Agriculture committee recommends that potash imports be resumed after the war—but not on a scale or under terms that would be destructive to the domestic industry, it warns.

The Committee report recommends that the distribution of fertilizers for other than research and demonstration purposes be handled through regular industry distribution channels. Subsidy payments made by AAA for the adoption of soil-conserving practices can be taken in cash or in the form of certain materials, including fertilizers, required to carry out the approved practice. In some cases these fertilizers have been distributed by AAA outside of the regular industry channels. Under war conditions, this procedure has certain advantages, the report admits, but under normal conditions distribution through industry channels is recommended. Distribution through industry channels can be effected, the Committee points out, by the use of the cash and the purchase-order plans which are now in effect in some States.

Pointing out that the need for a clearly-defined fertilizer policy will become increasingly important as the war in Europe nears its end, E. J. Coil asserts, "The Committee realizes that the use of fertilizers is closely related to other economic factors in our agricultural system, but due to restrictions of time and space it does not in this report explore fully these related problems."

The NPA Agriculture, Business and Labor Committees will consider the disposal of all types of government-owned plants in greater detail in joint studies of reconversion problems, as well as the complex problems of postwar agricultural price and production, according to Mr. Coil. "This report is therefore submitted to the public in the hope that it will stimulate discussion which may be helpful to the NPA Standing Committees in their consideration of national policies," he concludes.

Wage Rate Schedule Clarified

The following letter was received by the AAA in Baton Rouge on May 22nd.

Our attention has been called to the fact that the recently issued determination of wage rates for planting and cultivating work in 1945 may cause some hardship to producers by requiring an adjustment for one day's work in the payroll period which ended on May 5, 1945, the day on which the determination was issued. It is our interpretation that the requirement of this determination ". . . (the rates applicable for the period January 1, 1945 to date of this determination shall be those determined for production and cultivation for the calendar year 1944)" shall be deemed to include the date on which the determination was issued (May 5, 1945), and the specific rates provided shall become effective as of May 6, 1945.

Please advise the Parish Committees of this interpretation.

/s/ *H. H. Simpson*
Head, Labor Section
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Report To Contact Committee

Report on Cooperative Tests with the Hot Water Treatment of Sugarcane

Department of Plant Pathology, P. H. Dunckelman and C. W. Edgerton

January 1945

Introduction. Investigations to determine the effects of treating seed cane with hot water at 52° C. were continued through 1944. The cooperation of eight of the nine original cooperating plantations was maintained in carrying on the operations of planting, cultivating, and harvesting. The results of four years' work are embodied in the present report and cane was planted for tests for the fifth year.

Experimental Methods. Except in a few cases, where changes in routine procedures were absolutely necessary, the work in 1944 was carried on as in previous years. The land for the plots was selected after conferring with the plantation managers. As nearly as possible the preparation of the land, planting, cultivation, and harvesting operations conformed to the regular plantation practices.

Cover crops were turned under in advance of the first planting, to allow time for decomposition of the organic material. Where conditions permitted, plantings were made as near to the first of August, September, October, and November as possible. Two varieties of cane were used at each plantation and with two exceptions [1] four replications were made on both treated and check plots of each variety at each planting. Each small plot, or unit replication, was approximately 1/80 of an acre.

The treating procedure employed at all locations consisted of submerging the cane in water heated to 52° C. for a period of 20 minutes. Both treated and check plots were planted two running stalks with a lap of 10 to 20 inches. The cane was covered by either disc cultivators or turning plows. All test fields were cultivated in the regular manner.

It was not possible to obtain stand counts of all plots planted in the fall of 1944, but where such counts were made more rapid emergence of cane shoots and an increase in the number of plants was noted in the treated plots. In the spring of 1945 a complete count will be made on all of the test fields.

In the harvest operations the cane on each small plot was weighed and the plot was considered as a separate unit. The weights and comparative differences of treated and check plots, which are recorded in the tables of this report, represent averages of four such units. In every field, except in the plant cane plots at Albania where the cane was cut "clean" or stripped with the knives, and at Meeker where both the plant and stubble cane was burned clean of trash and shucks after being cut, all cane in all of the small plots was weighed "dirty" or with the shucks. This manner of weighing caused the tonnage per acre to run high in some cases, but the compartive weights of the plots was not affected.

Effect of the hot water treatment on yields. The results obtained from the stubble cane test fields, planted in the fall of 1942, are recorded in tables 1 to 3. No data on stubble were obtained in the Cinclare and Billeaud tests. The results on the plant cane test fields, planted in the fall of 1943, are given in tables 4 to 7. A summation of the effects of the hot water treatment on both stubble and plant cane of the variety C.P. 29-320 in 1944 is given in tables 8 to 9, and for four years in table 10.

Evaluation of tests. The results obtained in 1944 conform closely with the results of previous years. Increased yields of sugarcane have been obtained by treating the seed cane in hot water at 52° C. for a period of 20 minutes.

In a summation of the effect of the hot water treatment on tonnage of first year stubble of the variety C.P. 29-320 at six locations during the period 1942-44, the following results as shown in table 8 were obtained: (1) In the August plantings the treated plots averaged 1.41 tons per acre more than the check plots. (2) In September the treated plots yielded 0.47 tons more than the untreated. (3) The October hot-water treated plots gave no significant carryover increase, (4) The November treated plots yielded 3.11 tons per acre more than the check plots.

TABLE 1—Effect of the Hot Water Treatment on Tonnage of First Year Stubble at Albania and Glenwood. 1942-44. Yields in Tons per Acre.

Albania

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 29-103	Check	18.86	
	C. P. 29-103	Treated	21.50	+2.64
	C. P. 29-320	Check	16.46	
	C. P. 29-320	Treated	15.20	—1.26
September	C. P. 29-103	Check	18.88	
	C. P. 29-103	Treated	17.74	—1.14
	C. P. 29-320	Check	17.06	
	C. P. 29-320	Treated	14.64	—2.42
October	C. P. 29-103	Check	19.80	
	C. P. 29-103	Treated	22.08	+2.28
	C. P. 29-320	Check	17.04	
	C. P. 29-320	Treated	16.22	—0.82
November	C. P. 29-103	Check	17.96	
	C. P. 29-103	Treated	28.00	+10.04
	C. P. 29-320	Check	13.10	
	C. P. 29-320	Treated	15.44	+2.34

Glenwood

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	7.60	
	C. P. 28-19	Treated	6.90	—0.70
	C. P. 29-320	Check	14.28	
	C. P. 29-320	Treated	16.48	+2.20
September	C. P. 28-19	Check	9.60	
	C. P. 28-19	Treated	10.66	+1.06
	C. P. 29-320	Check	17.04	
	C. P. 29-320	Treated	19.06	+2.02
October	C. P. 28-19	Check	5.80	
	C. P. 28-19	Treated	8.58	+2.78
	C. P. 29-320	Check	17.32	
	C. P. 29-320	Treated	20.02	+2.70
November	C. P. 28-19	Check	13.68	
	C. P. 28-19	Treated	16.60	+2.92
	C. P. 29-320	Check	16.28	
	C. P. 29-320	Treated	17.24	+0.96

TABLE 2—Effect of the Hot Water Treatment on Tonnage of First Year Stubble at Greenwood and Lower Terrebonne. 1942-44. Yields in Tons per Acre.

Greenwood

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 29-103	Check	35.52	
	C. P. 29-103	Treated	32.86	—2.66
	C. P. 29-320	Check	29.36	
	C. P. 29-320	Treated	29.12	—0.24
September	C. P. 29-103	Check	31.78	
	C. P. 29-103	Treated	30.56	—1.22
	C. P. 29-320	Check	28.64	
	C. P. 29-320	Treated	29.30	+0.66
October	C. P. 29-103	Check	33.14	
	C. P. 29-103	Treated	32.70	—0.44
	C. P. 29-320	Check	31.40	
	C. P. 29-320	Treated	31.08	—0.32
November	C. P. 29-103	Check	35.38	
	C. P. 29-103	Treated	41.30	+6.92
	C. P. 29-320	Check	32.38	
	C. P. 29-320	Treated	37.22	+4.84

Lower Terrebonne

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	14.42	
	C. P. 28-19	Treated	14.28	—0.14
	C. P. 29-320	Check	17.34	
	C. P. 29-320	Treated	17.92	+0.58
September	C. P. 28-19	Check	18.26	
	C. P. 28-19	Treated	17.78	—0.48
	C. P. 29-320	Check	19.02	
	C. P. 29-320	Treated	17.98	—1.04
October	C. P. 28-19	Check	8.72	
	C. P. 28-19	Treated	15.74	+7.02
	C. P. 29-320	Check	17.16	
	C. P. 29-320	Treated	18.62	+1.46
November	C. P. 28-19	Check	14.82	
	C. P. 28-19	Treated	12.68	—2.14
	C. P. 29-320	Check	15.80	
	C. P. 29-320	Treated	14.76	—1.04

TABLE 3—Effect of Hot Water Treatment on Tonnage of First Year Stubble at Meeker and Westover. 1942-44. Yields in Tons per Acre.

Meeker

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	16.96	
	C. P. 28-19	Treated	23.44	+6.48
	C. P. 29-320	Check	27.50	
	C. P. 29-320	Treated	30.20	+2.70
September	C. P. 28-19	Check	21.54	
	C. P. 28-19	Treated	21.86	+0.32
	C. P. 29-320	Check	30.62	
	C. P. 29-320	Treated	31.78	+1.16
October	C. P. 28-19	Check	32.94	
	C. P. 28-19	Treated	32.10	—0.84
	C. P. 29-320	Check	25.54	
	C. P. 29-320	Treated	23.68	—1.86
November	C. P. 28-19	Check	33.63	
	C. P. 28-19	Treated	31.97	—1.66
	C. P. 29-320	Check	30.85	
	C. P. 29-320	Treated	32.80	+1.95

Westover

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	5.39	
	C. P. 28-19	Treated	7.15	+1.76
	C. P. 29-320	Check	13.34	
	C P. 29-320	Treated	17.93	+4.59
September	C. P. 28-19	Check	3.46	
	C. P. 28-19	Treated	6.16	+2.70
	C. P. 29-320	Check	12.27	
	C. P. 29-320	Treated	14.71	+2.44
October	C. P. 28-19	Check	12.66	
	C. P. 28-19	Treated	8.51	—4.15
	C. P. 29-320	Check	20.21	
	C. P. 29-320	Treated	19.11	—1.10
November	C. P. 28-19	Check	12.13	
	C. P. 28-19	Treated	7.13	—5.00
	C. P. 29-320	Check	14.82	
	C. P. 29-320	Treated	24.41	+9.59

TABLE 4—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Albania and Billeaud. 1943-44. Yields in Tons per Acre.

Albania

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 29-103	Check	25.46	
	C. P. 29-103	Treated	31.00	+5.54
	C. P. 29-320	Check	21.64	
	C. P. 29-320	Treated	22.68	+1.04
September	C. P. 29-103	Check	22.12	
	C. P. 29-103	Treated	26.48	+4.36
	C. P. 29-320	Check	21.46	
	C. P. 29-320	Treated	25.20	+3.74
October	C. P. 29-103	Check	24.36	
	C. P. 29-103	Treated	29.62	+5.26
	C. P. 29-320	Check	23.56	
	C. P. 29-320	Treated	26.94	+3.38
November	C. P. 29-103	Check	22.84	
	C. P. 29-103	Treated	28.52	+5.68
	C. P. 29-320	Check	29.12	
	C. P. 29-320	Treated	28.04	—1.08

Billeaud

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 29-116	Check	23.80	
	C. P. 29-116	Treated	25.12	+1.32
	C. P. 29-120	Check	19.34	
	C. P. 29-120	Treated	23.54	+4.20
September	C. P. 29-116	Check	23.72	
	C. P. 29-116	Treated	24.76	+1.04
	C. P. 29-120	Check	17.70	
	C. P. 29-120	Treated	19.08	+1.38
October	C. P. 29-116	Check	31.58	
	C. P. 29-116	Treated	26.56	—5.02
	C. P. 29-120	Check	21.24	
	C. P. 29-120	Treated	22.42	+1.18
November	C. P. 29-116	Check	24.46	
	C. P. 29-116	Treated	21.26	—3.20
	C. P. 29-120	Check	16.46	
	C. P. 29-120	Treated	20.30	+3.84

TABLE 5—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Cinclare and Glenwood. 1943-44. Yields in Tons per Acre.

Cinclare

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	Co. 281	Check	24.74	
	Co. 281	Treated	27.20	+2.46
	C. P. 29-320	Check	26.72	
	C. P. 29-320	Treated	26.94	+0.22
September	Co. 281	Check	21.68	
	Co. 281	Treated	28.00	+6.32
	C. P. 29-320	Check	25.14	
	C. P. 29-320	Treated	26.74	+1.60
October	Co. 281	Check	27.36	
	Co. 281	Treated	30.52	+3.16
	C. P. 29-320	Check	22.52	
	C. P. 29-320	Treated	28.10	+5.58
November	Co. 281	Check	28.12	
	Co. 281	Treated	31.06	+2.94
	C. P. 29-320	Check	25.66	
	C. P. 29-320	Treated	30.44	+4.78

Glenwood

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	27.88	
	C. P. 28-19	Treated	30.88	+3.00
	C. P. 29-320	Check	30.82	
	C. P. 29-320	Treated	33.50	+2.68
September	C. P. 28-19	Check	31.60	
	C. P. 28-19	Treated	29.88	—1.72
	C. P. 29-320	Check	35.48	
	C. P. 29-320	Treated	36.04	+0.56
October	C. P. 28-19	Check	20.58	
	C. P. 28-19	Treated	27.86	+7.28
	C. P. 29-320	Check	27.44	
	C. P. 29-320	Treated	33.00	+5.56

TABLE 7—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Raceland and Westover. 1943-44. Yields in Tons per Acre.

Raceland

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	26.40	
	C. P. 28-19	Treated	30.09	+3.69
	C. P. 29-320	Check	33.09	
	C. P. 29-320	Treated	38.16	+5.07
September	C. P. 28-19	Check	23.10	
	C. P. 28-19	Treated	28.85	+5.75
	C. P. 29-320	Check	31.26	
	C. P. 29-320	Treated	37.20	+5.94
October	C. P. 28-19	Check	19.53	
	C. P. 28-19	Treated	25.11	+5.58
	C. P. 29-320	Check	31.80	
	C. P. 29-320	Treated	35.64	+3.84
November	C. P. 28-19	Check	25.56	
	C. P. 28-19	Treated	28.32	+2.76
	C. P. 29-320	Check	27.63	
	C. P. 29-320	Treated	34.08	+6.45

Westover

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	37.74	
	C. P. 28-19	Treated	43.74	+6.00
	C. P. 29-320	Check	48.10	
	C. P. 29-320	Treated	50.26	+2.16
September	C. P. 28-19	Check	43.62	
	C. P. 28-19	Treated	42.93	—0.69
	C. P. 29-320	Check	50.38	
	C. P. 29-320	Treated	54.34	+3.96
October	C. P. 28-19	Check	37.22	
	C. P. 28-19	Treated	41.76	+4.54
	C. P. 29-320	Check	42.22	
	C. P. 29-320	Treated	49.76	+7.54
November	C. P. 28-19	Check	36.82	
	C. P. 28-19	Treated	41.84	+5.02
	C. P. 29-320	Check	40.58	
	C. P. 29-320	Treated	41.14	+0.56

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TABLE 6—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Lower Terrebonne and Meeker. 1943-44. Yields in Tons per Acre.

Lower Terrebonne

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
August	C. P. 28-19	Check	21.22	
	C. P. 28-19	Treated	23.60	+2.38
	C. P. 29-320	Check	27.62	
	C. P. 29-320	Treated	29.30	+1.68
September	C. P. 28-19	Check	17.54	
	C. P. 28-19	Treated	21.48	+3.94
	C. P. 29-320	Check	26.02	
	C. P. 29-320	Treated	26.92	+0.90
October	C. P. 28-19	Check	21.52	
	C. P. 28-19	Treated	23.60	+2.08
	C. P. 29-320	Check	22.74	
	C. P. 29-320	Treated	27.56	+4.82
November	C. P. 28-19	Check	16.20	
	C. P. 28-19	Treated	18.18	+1.98
	C. P. 29-320	Check	15.26	
	C. P. 29-320	Treated	22.58	+7.32

Meeker

Date of planting	Variety	Treatment	Tons/Acre	Difference between treated and check plots (tons)
September	C. P. 28-19	Check	42.16	
	C. P. 28-19	Treated	41.25	—0.91
	C. P. 29-320	Check	34.40	
	C. P. 29-320	Treated	43.49	+9.09
October	C. P. 28-19	Check	42.69	
	C. P. 28-19	Treated	40.05	—2.64
	C. P. 29-320	Check	32.91	
	C. P. 29-320	Treated	40.00	+7.09

2 Months planting—3 replications.

TABLE 8—Summation of the Effect of the Hot Water Treatment on Tonnage of First Year Stubble. 1942-44. (Variety C. P. 29-320). Yields in Tons per Acre.

Plantation	August Planting		September Planting		October Planting		November Planting	
	Treated	Check	Treated	Check	Treated	Check	Treated	Check
Albania	15.20	16.46	14.64	17.06	16.22	17.04	15.44	13.10
Glenwood	16.48	14.28	19.06	17.04	20.02	17.32	17.24	16.28
Greenwood	29.12	29.36	29.30	28.64	31.08	31.40	37.22	32.38
Lower Terrebonne	17.92	17.34	17.98	19.02	18.62	17.16	14.76	15.80
Meeker	30.20	27.50	31.78	30.62	23.68	25.54	32.80	30.85
Westover	17.93	13.34	14.71	12.27	19.11	20.21	24.41	14.82
Average	21.12	19.71	21.25	20.78	21.46	21.45	23.65	20.54

TABLE 9—Summation of the Effect of the Hot Water Treatment on Tonnage of Plant Cane. 1943-44. (Variety C. P. 29-320). Yields in Tons per Acre.

Plantation	August Planting		September Planting		October Planting		November Planting	
	Treated	Check	Treated	Check	Treated	Check	Treated	Check
Albania	22.68	21.64	25.20	21.46	26.94	23.56	28.04	29.12
Cinclare	26.94	26.72	26.74	25.14	28.10	22.52	30.44	25.66
Glenwood [1]	33.50	30.82	36.04	35.48	33.00	27.44		
Lower Terrebonne	29.30	27.62	26.92	26.02	27.56	22.74	22.58	15.26
Meeker [2]			43.49	34.40	40.00	32.91		
Raceland	38.16	33.09	37.20	31.26	35.64	31.80	34.08	27.63
Westover	50.26	48.10	54.34	50.38	49.76	42.22	41.14	40.58
Average	33.47	31.33	35.70	32.02	34.43	29.03	31.26	27.65

[1] No November planting at Glenwood.
[2] No August or November plantings at Meeker.

Table 9 gives a summation of the effect of the hot water treatment on tonnage of plant cane, at seven locations, of the variety C.P. 29-320 in the period 1943-44. Increases of 2.14 T., 3.68 T., 5.40 T., and 3.61 T. are evidence in the August, September, October, and November plantings, respectively.

Also, the varieties C.P. 28-19, C.P. 29-103, and C.P. 29-120, which have been included in these tests, show comparable increases in yield due to the hot water treatment.

Table 10 shows that satisfactory increases in yield have been obtained for a period of four years, 1941 to 1944 inclusive.

[1] Three replications instead of four were employed in all of the plantings at Glenwood and Raceland.

TABLE 10—Increase or Decrease in Yield from Treatment (Tons). Variety C. P. 29-320. 1941-42-43-44.

Plantation	Date of Planting	Year				Average
		1941	1942	1943	1944	
Albania	Aug.	4.27	3.87	—2.72	1.04	1.61
	Sept.	2.94	2.56	2.34	3.74	2.90
	Oct.	5.85	1.28	2.50	3.38	3.25
	Nov.	1.72	9.42	8.10	—1.08	4.54
Billeaud	Aug.	4.89	1.22			3.05
	Sept.	4.17	3.87			4.02
	Oct.	5.73	3.36			4.54
	Nov.	7.02	4.60			1.21
Cinclare	Aug.	—2.35	—5.78	2.28	0.22	—1.41
	Sept.	0.90	2.15	2.62	1.60	1.82
	Oct.	2.36	—6.72	1.30	5.58	0.63
	Nov.	—6.78	5.27	5.28	4.78	2.14
Glenwood	Aug.	—2.29	—1.39	1.84	2.68	0.21
	Sept.	2.01	1.01	4.78	0.56	2.09
	Oct.	2.59	2.73	5.36	5.56	4.06
	Nov.	5.36	2.04	6.78	----	4.73
Greenwood	Aug.	----	—1.20	3.52		1.16
	Sept.	2.54	1.36	—1.04		0.95
	Oct.	0.87	2.42	6.16		3.15
	Nov.	5.72	4.73	4.17		4.87
Lower Terrebonne	Aug.	—4.13	1.49	—1.46	1.68	—0.61
	Sept.	1.20	4.07	0.20	0.90	1.59
	Oct.	4.97	5.18	5.46	4.82	5.11
	Nov.	—1.05	0.43	0.84	7.32	1.89
Meeker	Aug.	—2.30	2.58	2.74	----	1.01
	Sept.	13.22	2.82	4.46	9.09	7.39
	Oct.	7.00	5.71	2.94	7.09	5.68
	Nov.	7.04	—1.50	2.14	----	2.56
Raceland	Aug.	3.23	—1.87	1.08	5.07	1.87
	Sept.	5.16	—2.29	7.01	5.94	3.95
	Oct.	4.19	2.10	2.42	3.84	3.14
	Nov.	2.21	3.45	4.92	6.45	4.26
Westover	Aug.	0.02	—1.09	0.40	2.16	0.37
	Sept.	3.04	1.51	8.02	3.96	4.13
	Oct.	—0.22	2.20	1.38	7.54	2.72
	Nov.	5.55	4.65	2.78	0.56	3.38

Average Yield Increases per Acre from Treatment for four-year Period on Nine Plantations (Variety C. P. 29-320)

August	September	October	November
0.81 tons	3.24 tons	3.59 tons	3.29 tons

Report To Contact Committee

Department of Plant Pathology

By I. L. Forbes and P. J. Mills

May 3, 1945

During the past year the field work on sugarcane diseases was carried on as in previous years. From field plots yield data were obtained which showed the effects of the red rot and mosaic diseases on commercial varieties and more promising unreleased seedlings.

Table 1 is a record of these data.

TABLE 1—Effect of Mosaic and Red Rot on Yield as obtained from Plots Planted at Baton Rouge in Fall of 1943 and Harvested in Fall of 1944.

Variety	Yield tons per acre (average of several replications)				
	Mosiac	Healthy	Healthy Inoculated Red Rot	Healthy 52°C ½ hr. Check	Healthy 52°C ½ hr. Inoc. Red Rot
Co. 281	30.59	35.27	22.91	34.65	16.52
Co. 290	48.00	55.24	31.61	52.99	36.25
C. P. 33-243	29.18	39.43	15.55	46.81	14.69
C. P. 33-310		36.78	34.31	37.65	31.66
C. P. 29-103		33.01	29.75	34.84	25.16
C. P. 29-116		44.29	45.87	49.30	42.05
C. P. 29-120		36.73	33.92	31.95	28.61
C. P. 29-320		29.72	26.80	30.20	25.08
C. P. 34-92		41.32	18.94	40.21	18.85
C. P. 34-120		38.71	24.47	37.55	21.61
C. P. 34-139		40.60	39.68	38.38	33.01
C. P. 36-55		41.95	10.94	43.06	2.8
C. P. 36-105		43.11	37.79	37.70	34.4
C. P. 36-191		47.36	40.02	43.36	37.3

Actual reduction in yield by mosaic and red rot.

Effects of mosaic and red rot in reducing yields of some of the commercial varieties of sugarcane have been obtained for 1943-1944. Results are given in Tables 2 and 3.

TABLE 2—Reduction in Yield (per cent) in Plant Cane caused by Mosaic at Baton Rouge

Variety	1943	1944
Co. 281	16.6	13.2
Co. 290	21.5	13.1
C. P. 33-243	32.9	25.9

TABLE 3—Reduction in Yield (per cent) in Plant Cane caused by Red Rot at Baton Rouge

Type of Resistance	Variety	1943	1944
Susceptible	C. P. 36-55	33	74
Susceptible	C. P. 34-92	29	54
Susceptible	C. P. 33-243	49	61
Susceptible	Co. 290	45	43
Intermediate	Co. 281	12	35
Intermediate	C. P. 34-120	10	37
Intermediate	C. P. 36-191	18	16
Intermediate	C. P. 29-320		10
Resistant	C. P. 29-103		10
Resistant	C. P. 36-105	14	12
Resistant	C. P. 29-120		8
Resistant	C. P. 33-310		7
Resistant	C. P. 29-116		4
Resistant	C. P. 34-139		2

Susceptibility of commercial varieties and unreleased seedlings to red rot.

In October of 1944 stalks were inoculated with red rot and planted in the sugarcane field. A number of these stalks of each variety were dug at intervals during the winter of 1944-1945. These were taken to the laboratory where they were split and the extent of red rot determined. Results are given in Table 4.

TABLE 4—Relative susceptibility of sugarcane varieties to red rot, determined by inoculating stalks of cane before planting. Inoc. fall, 1944.

Very Susceptible	Susceptible	Moderately Susceptible	Moderately Resistant	Resistant	Very Resistant
December 4, 1944					
C. P. 33-243	C. P. 34-120	F. 36-819	C. P. 29-116	C. P. 29-103	C. P. 34-139
C. P. 36-55	Co. 290	C. P. 36-191	C. P. 29-120	C. P. 36-105	C. P. 36-13
C. P. 36-161			C. P. 36-183	C. P. 36-19	C. P. 36-111
			C. P. 29-320		C. P. 33-310
January 11, 1945					
C. P. 33-243	C. P. 34-120	F. 36-819	C. P. 29-103	C. P. 34-139	C. P. 36-19
C. P. 36-55	C. P. 34-92	C. P. 29-116	C. P. 36-183	C. P. 36-105	C. P. 36-13
C. P. 36-161	Co. 290	C. P. 29-120		C. P. 33-310	C. P. 36-111
		C. P. 36-191			
		C. P. 29-320			
February 9, 1945					
C. P. 33-243	Co. 290	C. P. 29-120	C. P. 29-103	C. P. 33-310	C. P. 36-13
C. P. 36-55	C. P. 34-92	C. P. 29-320	C. P. 29-116		C. P. 36-19
C. P. 36-161	C. P. 34-120	C. P. 36-183	C. P. 36-105		C. P. 36-111
		C. P. 36-191			C. P. 34-139
February 28, 1945					
C. P. 33-243	C. P. 34-120	C. P. 29-120	C. P. 29-116	C. P. 36-105	C. P. 34-139
C. P. 36-55	C. P. 34-92	C. P. 29-320	C. P. 29-103	C. P. 33-310	C. P. 36-19
C. P. 36-161	Co. 290	C. P. 36-191			C. P. 36-13
		C. P. 36-183			
		F. 36-819			
March 20, 1945					
C. P. 33-243	C. P. 34-92	C. P. 29-320		C. P. 36-105	C. P. 36-19
C. P. 36-161	Co. 290	C. P. 29-103		C. P. 33-310	C. P. 36-13
C. P. 36-55	F. 36-819	C. P. 29-116			C. P. 34-139
C. P. 34-120		C. P. 36-183			C. P. 36-111
		C. P. 36-191			

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PARISHES	Cropland (Acres)				Proportionate Shares (Acres)				Total Planted (Acres)			
	1940	1941	1942	1943	1940	1941	1942	1943	1940	1941	1942	1943
Acadia												
Ascension	34,688.2	30,747.7	28,886	27,709	11,547.3	11,299.7	10,984	10,897	10,834.8	10,146.5	10,984	10,909
Assumption	46,413.0	43,796.1	44,285	44,998	17,557.5	21,639.2	26,279	25,913	22,482.6	22,501.3	26,321	25,994
Avoyelles	15,099.8	15,852.1	15,617	12,415	3,692.0	3,862.9	3,529	2,817	3,298.8	3,279.4	3,653	2,908
E. Baton Rouge	2,913.6	1,211.4	1,106	1,015	588.6	486.9	400	388	393.3	351.4	401	388
Evangeline	95.7	85.5	52		25.0	24.7	5		11.9	12.4	5	
Iberia	84,663.9	83.773.6	79,151	81,504	30,277.7	31,621.5	34,266	34,048	31,148.2	31,683.7	35,333	35,545
Iberville	50,724.2	52,378.9	49,317	48,266	20,428.4	22,491.3	23,554	22,359	21,174.2	21,341.0	23,698	23,433
Jefferson	182.7		112	32	54.0		29	6	38.6		29	10
Lafayette	52,236.5	44,114.7	44,413	49,724	13,693.9	14,360.8	11,856	11,562	11,559.0	11,073.4	12,035	11,837
Lafourche	52,912.4	68,355.5	53,260	53,194	19,199.7	20,535.6	24,218	23,504	19,634.3	19,825.0	24,218	23,504
Plaquemine												
Pointe Coupee	53,288.2	57,905.9	50,585	44,710	15,479.8	15,452.5	12,981	11,796	12,179.5	12,179.8	12,987	11,802
Rapides	16,643.6	18,451.2	17,557	14,349	2,564.2	2,853.3	2,188	1,526	2,225.3	2,276.8	2,459	1,749
St. Bernard										1,850.5		
St. Charles	6,039.1	5,642.2	4,756	3,876	2,328.0	2,280.6	1,867	1,105	2,023.0		1,867	1,602
St. James	32,467.1	32,222.6	32,832	31,560	11,595.7	11,922.5	13,297	13,361	11,542.6	11,832.3	13,297	13,361
St. John	28,036.5	27,498.9	27,603	27,220	11,744.0	13,023.8	14,288	13,519	13,138.8	13,328.4	14,653	14,467
St. Landry	18,536.5	12,743.0	13,313	10,518	2,914.3	2,402.0	2,001	1,535	2,258.4	1,759.3	2,015	1,690
St. Martin	68,732.2	58,171.5	57,746	56,942	20,375.8	20,899.6	17,288	16,188	15,310.4	16,358.3	18,124	17,792
St. Mary	57,029.2	55,970.4	58,033	55,662	22,486.9	25,512.8	30,565	30,895	25,918.1	25,898.5	30,673	31,146
Terrebonne	65,268.3	62,764.9	59,734	60,513	29,287.0	30,586.2	34,413	33,307	31,364.9	30,997.5	34,815	34,059
Vermilion	63,225.5	47,839.8	45,560	41,196	12,820.5	12,150.9	10,547	8,407	10,480.5	9,973.9	10,987	9,135
W. Baton Rouge	31,723.3	32,839.2	31,332	30,840	13,159.2	14,935.7	15,745	15,093	14,468.1	14,144.4	15,748	15,413
W. Feliciana	9,775.6	9,775.6	13,047	12,625	3,282.8	3,282.9	4,299	4,006	3,631.3	3,353.8	4,330	4,242
TOTAL	790,695.1	762,140.7	728,297	708,868	265,102.3	281,625.4	294,599	282,231	265,116.6	264,167.6	298,632	290,986

PROPORTIONATE SHARES ACRES HARVESTED FOR SUGAR—YIELD OF SUGARCANE PER ACRE AND YIELD OF RECOVERABLE SUGAR PER ACRE OF LOUISIANA FARMERS PARTICIPATING IN THE SUGAR PROGRAM (SUGAR ACT OF 1937) BY PARISHES FROM A. A. A. REPORTS

PARISHES	Proportionate Shares Harvested for Sugar (Acres)				Yield of Cane Per Acre Tons				Yield of Recoverable Sugar per Acre CWT			
	1940	1941	1942	1943	1940	1941	1942	1943	1940	1941	1942	1943
Acadia												
Ascension	8,256.1	8,808.9	10,141	10,075	12.48	14.8	16.93	19.25	19.78	23.65	26.29	32.57
Assumption	14,388.2	19,140.9	24,105	24,027	17.13	19.5	18.99	22.10	28.50	32.37	32.93	38.15
Avoyelles	2,347.8	2,799.3	3,245	2,752	15.91	17.5	16.71	19.14	23.91	30.14	29.28	33.36
E. Baton Rouge	339.6	326.1	380	366	12.15	14.9	13.83	18.31	20.18	23.23	23.66	31.73
Evangeline	10.4	12.4	5		6.29	7.5	5.22		10.15	12.54	9.15	
Iberia	23,982.3	25,995.9	31,052	30,553	13.21	15.5	17.09	19.86	21.55	25.83	30.04	33.51
Iberville	15,521.6	17,910.8	21,159	19,974	14.96	18.4	18.34	21.78	24.92	29.50	31.43	37.18
Jefferson	34.0		26	6	8.64		14.17	5.60	13.58		23.89	9.33
Lafayette	8,427.5	9,022.2	10,276	10,066	10.54	14.4	13.77	17.14	18.24	23.76	25.03	29.88
Lafourche	16,064.0	17,653.7	22,454	22,060	15.49	20.2	16.68	21.34	25.29	33.34	28.69	36.65
Plaquemine												
Pointe Coupee	9,626.1	10,459.7	11,782	10,862	13.43	16.6	19.01	21.58	21.63	26.42	32.05	36.72
Rapides	1,646.8	1,910.8	2,050	1,462	16.98	19.3	18.97	15.50	26.76	31.57	33.61	44.76
St. Bernard												
St. Charles	1,613.1	1,616.4	1,691	1,019	11.85	15.8	14.76	18.04	18.88	25.79	25.83	31.42
St. James	9,777.7	10,338.7	12,423	12,441	12.61	15.3	17.06	22.73	20.54	25.54	29.30	37.51
St. John	9,734.3	11,311.5	13,046	12,434	13.98	17.5	19.43	21.92	23.15	29.61	33.35	37.00
St. Landry	1,372.7	1,494.2	1,913	1,487	12.18	17.8	17.31	21.12	19.38	28.04	27.99	35.51
St. Martin	11,899.5	13,676.6	15,795	14,282	13.02	15.8	15.86	20.83	21.33	25.56	26.99	33.77
St. Mary	18,536.7	21,917.4	28,049	27,762	14.89	19.0	18.71	21.32	23.81	31.64	32.79	36.25
Terrebonne	23,895.0	26,200.4	31,490	31,043	14.17	18.0	17.26	20.32	22.55	29.11	28.98	33.51
Vermilion	7,028.5	7,721.1	9,542	7,357	10.00	16.4	15.69	19.47	16.29	27.86	26.94	32.51
W. Baton Rouge	10,487.8	12,428.0	14,400	13,414	14.11	17.4	18.25	20.27	23.39	28.86	31.42	33.39
West Feliciana	2,557.0	3,022.9	4,044	3,814	16.23	21.7	19.84	24.11	24.81	33.79	33.15	38.36
TOTAL	197,546.7	223,767.9	269,068	257,256	13.97	17.4	17.55	20.88	22.74	28.71	30.14	35.22

RECAPITULATION OF FINAL MANUFACTURING REPORTS OF LOUISIANA SUGAR MILLS (CROPS 1934-1944) A. A. A. Records

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
Crop Days	58.0	68.6	80.0	80.06	73.30	63.82	39.85	52.35	65.2	82.33	75.65
Time Lost % of total time	16.49	15.89	18.61	20.81	13.43	13.00	15.91	19.63	19.49	24.87	23.74
Cane Tons Ground	3,163,901	4,182,715	4,941,235	5,240,675	5,858,871	5,083,657	2,923,204	3,946,699	4,734,321	5,388,245	4,928,686
% of Total Cane Ground	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Tons Ground per Hour	38.83	42.17	51.98	50.75	53.38	56.10	54.25	55.83	55.27	55.84	51.59
Extraction N. J. % Cane	72.64	72.63	75.51	74.69	75.61	75.66	75.16	75.39	74.41	74.87	73.27
Sucrose Extraction	90.37	90.71	91.26	91.32	91.44	91.74	91.30	91.74	91.14	90.93	90.13
Saturation % Cane	18.26	16.39	14.77	14.479	16.10	15.78	15.00	15.66	17.71	17.07	16.13
Fibre % Cane	14.92	13.92	13.22	12.36	13.66	13.57	13.06	13.38	13.99	13.86	14.25
Java Ratio	75.39	77.54	78.63	77.51	78.71	78.23	78.19	78.14	77.63	78.17	77.31
Analyses											
Crusher Juice Brix	16.04	16.42	16.11	15.86	16.59	16.75	15.81	16.27	16.83	16.77	16.32
Brix Factor (Final Report)	97.05	97.08	92.27	97.47	97.35	97.25	97.22	97.30	97.21	97.08	97.43
Sucrose Factor (Final Report)	93.62	94.50	94.87	94.91	95.20	94.89	94.98	95.07	95.06	94.94	95.05
Normal Juice Brix	15.58	15.94	15.67	15.42	16.15	16.29	15.37	15.83	16.36	16.28	15.90
Normal Juice Sucrose	12.22	12.46	11.84	11.76	12.50	12.63	11.93	12.14	12.70	12.39	11.93
Normal Juice Purity	78.36	78.17	75.56	76.26	77.40	75.53	77.62	76.69	77.63	76.10	75.03
Factory Sirup Brix	57.06	57.56	59.23	58.33	58.88	59.24	58.52	58.68	57.91	58.53	58.08
Bagasse:—% Sucrose	3.17	3.07	3.09	2.92	3.06	3.04	3.07	2.93	3.07	3.11	3.07
Bagasse:—% Moisture	48.53	47.95	47.97	48.38	47.69	47.69	48.94	48.64	49.00	49.09	49.38
Bagasse:—% Fiber	47.35	47.69	47.86	47.53	47.44	47.88	46.95	47.56	46.81	46.67	46.29
Press Cake, Sucrose	5.12	5.47	5.25	5.08	4.76	4.45	3.93	3.78	4.24	4.14	3.81
Residual Juice Brix		6.57	6.20	6.29	6.13	6.22	5.84	5.88	5.93	6.03	6.34
Sucrose Balance											
Sucrose in Molasses % Cane	0.920	0.864	0.930	1.004	1.022	0.964	0.969	0.961	0.945	1.067	1.047
Sucrose in Press Cake % Cane	0.090	0.082	0.096	0.111	0.097	0.082	0.082	0.078	0.081	0.081	.104
Sucrosein Undetermined % Cane	0.150	0.135	0.201	0.201	0.220	0.179	0.141	0.183	0.198	0.253	.266
Sucrose in Bagasse % Cane	0.950	0.944	0.858	0.848	0.994	0.860	0.854	0.824	0.919	0.925	.956
Sucrose Total Losses % Cane	2.110	2.025	2.085	2.224	2.225	2.085	2.046	2.046	2.143	2.326	2.373
Sucrose Sugars % Cane	7.750	8.121	7.729	7.412	8.110	8.328	7.775	7.933	8.229	7.875	7.322
Total Sucrose % Cane	9.860	10.146	9.814	9.635	10.335	10.413	9.821	9.979	10.372	10.201	9.695
Average Rolls per Tandem	------	8.82	9.13	10.78	10.01	10.12	10.24	10.51	10.50	10.50	10.48
Average Crushers per Tandem	------	0.89	1.03	0.88	0.92	0.92	0.94	0.97	0.97	0.97	.96
Average Knives per Tandem	------	0.89	0.90	0.99	0.95	0.92	0.96	1.04	1.04	1.04	1.06
Lbs. 96° Sugar M&E T/C	153.22	168.66	160.993	154.391	168.96	173.68	161.98	165.28	171.44	164.06	152.50
Gals. Final Molasses M&E T/C	5.6	5.94	6.520	6.57	6.48	6.64	6.28	6.69	6.59	7.16	7.28
Boiling House Efficiency	98.56	99.77	99.290	95.281	97.16	98.68	98.00	98.69	98.29	97.10	96.64

Results of Sugarcane Variety Tests in Louisiana During 1944

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Cooperative plantation tests of promising new seedlings in comparison with commercial varieties of sugarcane were continued during 1944 in accordance with plans which have been described in previous publications. This report gives a tabular summary of yield data and a brief discussion of results obtained with important commercial varieties and the most promising unreleased seedlings.

Tests on Light Soils

Tables 1, 2 and 3 give results of the main tests on light soils. In this series were included the principal commercial varieties and the seedlings which had indicated promise in earlier plantation trials. Tables 4 and 5 summarize results of tests with less advanced selections in comparison with standard varieties.

Of special interest are results obtained with C.P. 34/120 which was released for commercial culture in 1943. In the average of plant cane tests (table 1) Co. 290 surpassed C.P. 34/120 in indicated production of sugar per acre by slightly more than 400 pounds per acre but stubble results were preponderantly in favor of C.P. 34/120. In the average of 18 tests, which included plant cane, first and second stubble, C.P. 34/120 surpassed Co. 290 its nearest competitor by approximately 250 pounds in annual production of sugar per acre and maintained a significant average advantage in indicated yield of sugar per ton of cane.

C.P. 36/105 fell rather consistently below C.P. 34/120 in production of sugar per acre and gave a somewhat lower average indicated yield of sugar per ton of cane. In the average of 6 plant cane tests (table 1) it was 494 pounds of sugar per acre and 2.5 pounds of sugar per ton of cane below C.P. 34/120. In the average of first stubble tests (table 5) the differences were 514 pounds of sugar per acre and 6.5 pounds of

TABLE 1—Results of plant cane variety tests on light soils in Louisiana during 194 .

Variety	Godchaux (Raceland) 11-22[1]	Oaklawn (Franklin) 11-28	Albania (Jeanerette) 11-22	Roland's Farm (Erath) 11-20	Stella (St. Martinville) 11-18	Alma (Lakeland) 11-15	Average
Average yield of cane per acre (tons)							
*Co. 281	17.8	15.6	19.2	14.5	20.5	25.7	18.88
*Co. 290	35.1	30.9	34.9	27.7	30.2	45.6	34.07
*C. P. 28/19	19.9	14.5	19.9	15.9	----	25.7	19.32[3]
*C. P. 29/116	35.4	19.9	31.9	27.4	33.3	41.2	31.52
*C. P. 29/320	23.2	18.7	21.3	15.1	26.1	32.1	22.75
*C. P. 33/310	20.7	17.4	21.3	18.6	27.1	34.6	23.28
C. P. 33/485	19.4	13.9	17.5	14.9	19.7	27.7	18.85
C. P. 34/1	24.7	18.6	26.2	23.5	29.3	36.8	26.52
C. P. 34/53	22.8	20.7	29.1	18.5	25.3	31.2	24.60
C. P. 34/92	22.5	20.6	28.9	17.2	24.1	35.0	24.72
C. P. 34/115	35.3	16.2	26.6	23.6	30.8	46.5	29.83
*C. P. 34/120	35.7	23.2	27.1	23.7	27.6	41.4	29.78
C. P. 34/139	37.8	21.5	26.7	22.4	33.0	43.2	30.77
C. P. 36/75	29.9	17.8	22.2	20.3	25.6	32.0	24.63
C. P. 36/85	35.5	19.9	26.5	21.6	28.6	39.3	28.57
C. P. 36/105	32.1	21.2	28.1	21.5	25.4	36.4	27.45
Difference							
For P.=.05	5.00	3.37	3.70	3.82	3.15	5.66	3.32[4]
For P.=.01	6.68	4.50	4.94	5.10	4.24	7.56	4.40
Avergae indicated yield of 96° sugar per ton of cane (pounds)[2]							
Co.281	160.9	212.4	214.1	187.3	165.6	166.3	182.5
Co. 290	164.0	208.4	188.2	177.2	152.2	149.5	171.6
C. P. 28/19	191.0	240.9	241.5	204.4	----	202.2	209.4[3]
C. P. 29/116	133.3	209.8	180.5	161.3	140.8	139.2	156.0
C. P. 29/320	182.2	220.0	208.4	200.9	169.7	169.0	188.0
C. P. 33/310	162.9	208.8	213.3	177.6	166.4	166.0	179.7
C. P. 33/485	193.9	231.4	224.5	178.8	187.7	209.4	204.0
C. P. 34/1	151.0	191.9	169.2	149.4	140.1	155.5	157.5
C. P. 34/53	165.5	205.1	189.2	159.1	152.5	135.2	166.3
C. P. 34/92	159.9	201.8	182.7	169.1	145.2	143.4	164.9
C. P. 34/115	155.4	230.3	205.1	192.6	159.0	140.2	171.2
C. P. 34/120	178.1	209.2	208.7	166.7	172.7	167.2	181.9
C. P. 34/139	134.2	201.9	170.7	156.1	133.1	116.1	145.6
C. P. 36/75	163.4	211.1	195.5	151.8	147.2	159.8	168.8
C. P. 36/85	146.0	221.3	180.8	153.4	144.6	142.4	160.0
C. P. 36/105	168.6	209.8	205.9	151.3	173.3	171.5	179.4
Difference							
For P.=.05	14.86	12.42	13.59	21.40	13.41	13.65	11.61[4]
For P.=.01	19.85	16.59	18.16	28.59	18.06	18.23	15.41
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	2864	3313	4111	2716	3395	4274	3445
Co. 290	5756	6440	6568	4908	4596	6817	5847
C. P. 28/19	3801	3493	4806	3250	----	5197	4045[3]
C. P. 29/116	4719	4175	5758	4420	4689	5735	4916
C. P. 29/320	4227	4114	4439	3034	4429	5425	4278
C. P. 33/310	3372	3633	4543	3303	4509	5744	4184
C. P. 33/485	3762	3216	3929	2664	3698	5800	3845
C. P. 34/1	3730	3569	4433	3511	4105	5722	4178
C. P. 34/53	3773	4246	5506	2943	3858	4218	4091
C. P. 34/92	3598	4157	5280	2909	3499	5019	4077
C. P. 34/115	5486	3731	5456	4545	4897	6519	5106
C. P. 34/120	6358	4853	5656	3951	4767	6922	5418
C. P. 34/139	5073	4341	4558	3497	4392	5016	4479
C. P. 36/75	4886	3758	4340	3082	3768	5114	4158
C. P. 36/85	5183	4404	4791	3313	4136	5596	4570
C. P. 36/105	5412	4448	5786	3253	4402	6243	4924
Difference							
For P.=.05	916	763	787	814	590	1028	662[4]
For P.=.01	1224	1020	1052	1087	794	1371	879

[1] Date of harvest.
[2] Weighted average values given in this and subsequent tables.
[3] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistica l Technique in Agricultural Research pp. 181-188).
[4] Experimental error based on Location X Variety interaction term.
* Varieties grown commercially—others have not been released.

sugar per ton of cane, also both in favor of C.P. 34/120.

Confirming results of previous tests, C.P. 34/115 gave relatively good yields of cane and sugar in plant cane tests but proved a weak stubbler.

C.P. 34/92 proved inferior to C.P. 34/120 in indicated production of sugar per acre by average differences ranging from 876 pounds in second stubble tests (table 3) to 1341 pounds in plant cane tests (table 1). It was likewise consistently below C.P. 34/120 in indicated yield of sugar per ton of cane.

C.P. 36/183, which was included in preliminary plant cane tests only, averaged 8.5 pounds below C.P. 34/120 in indicated yield of sugar per ton of cane, but surpassed the latter in 5 out of 6 comparisons (table 4) and by an average difference of 504 pounds in yield of sugar per acre.

C.P. 36/19 (tables 4 and 5) was under C.P. 34/120 in indicated yield of sugar per acre by average differences of 631 pounds in plant cane tests and 382 pounds in first stubble tests. However, it surpassed C.P. 34/120 in yield of sugar per ton of cane by average differences of 5.6 pounds in plant cane and 8.5 pounds in first stubble.

C.P. 35/14 (tables 4 and 5) produced reasonably good plant cane yields and maintained exceptionally high indicated yields of available sugar, but was a relatively weak stubbler.

C.P. 34/139 gave consistently high yields of cane per acre and has displayed exceptionally good stubbling qualities. However it has been consistently low in yield of sugar per tone of cane as shown by averages ranging from 4.3 pounds to 10.4 pounds below corresponding ones for C.P. 29/116 (tables 1, 2 and 3). In yield of sugar per acre C.P. 34/139 was definitely inferior to C.P. 34/120 as shown by average differences ranging from 684 pounds in second stubble tests (table 3) to 939 pounds in plant cane tests (table 1).

None of the other unreleased varieties in plantation tests has indicated qualities of unusual merit in comparison with varieties now available for commercial culture. However, some of these have appeared in very limited tests only and a conclusive evaluation of their relative merits must await results of more comprehensive tests.

The comparative performance of commercial varieties included in plantation tests has not been essentially different from that observed in previous tests.

TABLE 2—Results of first stubble variety tests on light soils in Louisiana during 1944.

Variety	Godchaux (Raceland) 11-8[1]	Oaklawn (Franklin) 11-24	Albania (Jeanerette) 10-30	Roland's Farm (Erath) 11-1	Stella (St. Martinville) 11-16	Alma (Lakeland) 11-14	Average
Average yield of cane per acre (tons)							
*Co. 281	22.5	10.4	16.0	18.1	13.9	13.9	15.80
*Co. 290	35.3	25.1	24.8	29.2	28.4	27.0	28.30
*C. P. 28/19	27.2	9.7	17.2	13.9	----	19.7	17.57[2]
*C. P. 29/116	40.4	28.0	28.5	27.1	30.5	41.1	32.60
*C. P. 29/320	24.7	13.3	17.9	12.9	22.1	24.3	19.20
C. P. 32/206	26.3	20.7	16.4	20.3	22.9	24.9	21.92
C. P. 34/1	36.3	27.9	28.3	29.9	32.3	26.3	30.17
C. P. 34/21	33.1	16.3	23.6	28.7	26.6	34.3	27.10
C. P. 34/53	31.1	29.4	24.4	23.9	28.3	32.0	28.18
C. P. 34/75	28.1	17.5	17.8	20.8	27.4	26.8	23.07
C. P. 34/80	28.3	19.7	16.2	19.4	33.1	29.3	24.33
C. P. 34/86	32.2	29.8	24.0	25.5	23.5	25.0	26.67
C. P. 34/92	30.3	26.8	24.4	18.0	24.2	36.1	26.63
C. P. 34/115	32.1	25.9	25.1	24.7	22.4	29.6	26.63
*C. P. 34/120	36.2	29.6	27.2	25.9	29.6	38.5	31.17
C. P. 34/139	41.3	26.8	27.9	25.1	30.0	35.8	31.15
Difference							
For P.=.05	7.06	6.90	4.87	5.72	4.98	6.71	3.89[3]
For P.=.01	9.42	9.21	6.50	7.64	6.66	8.97	5.17
Average indicated yield of 96° sugar per ton of cane (pounds)							
Co. 281	181.8	186.1	162.5	141.8	165.0	177.8	168.3
Co. 290	193.3	204.6	169.0	149.6	162.7	180.7	176.8
C. P. 28/19	198.2	217.3	180.2	170.2	----	193.5	191.9[2]
C. P. 29/116	172.7	175.0	141.4	126.5	149.8	145.4	152.8
C. P. 29/320	205.0	206.1	173.7	185.4	181.5	183.3	189.0
C. P. 32/206	205.0	213.1	190.6	166.3	169.4	184.8	188.5
C. P. 34/1	163.0	174.0	147.4	115.4	166.3	165.7	155.4
C. P. 34/21	163.4	187.4	168.2	138.5	165.4	144.6	158.5
C. P. 34/53	162.4	175.0	89.8	117.7	157.4	149.1	144.5
C. P. 34/75	176.2	189.0	143.4	148.6	159.7	145.7	160.3
C. P. 34/80	184.9	203.1	152.3	149.5	167.5	164.9	171.1
C. P. 34/86	176.4	175.8	147.4	107.7	161.2	160.1	156.2
C. P. 34/92	174.8	180.1	154.8	132.8	152.1	137.1	156.0
C. P. 34/115	187.1	217.6	177.2	147.9	163.4	152.1	174.7
C. P. 34/120	170.1	177.5	168.8	165.0	176.4	177.5	172.9
C. P. 34/139	165.5	167.2	156.9	121.6	145.8	133.2	149.2
Difference							
For P.=.05	13.83	17.91	20.96	16.27	16.09	19.34	13.65[3]
For P.=.01	18.48	23.92	27.99	21.73	21.49	25.83	18.12
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	4090	1935	2600	2567	2293	2471	2659
Co. 290	6823	5135	4191	4368	4621	4879	5003
C. P. 28/19	5391	2108	3099	2366	----	3812	3371[2]
C. P. 29/116	6977	4900	4030	3428	4569	5976	4980
C. P. 29/320	5063	2741	3109	2392	4011	4454	3628
C. P. 32/206	5391	4411	3126	3376	3879	4602	4131
C. P. 34/1	5917	4855	4171	3450	5371	4358	4687
C. P. 34/21	5409	3055	3970	3975	4400	4960	4295
C. P. 34/53	5051	5145	2191	2813	4454	4771	4071
C. P. 34/75	4951	3307	2553	3091	4376	3905	3697
C. P. 34/80	5233	4001	2467	2900	5544	4832	4163
C. P. 34/86	5680	5239	3538	2746	3788	4002	4165
C. P. 34/92	5296	4827	3777	2390	3681	4949	4153
C. P. 34/115	6006	5636	4448	3653	3660	4502	4651
C. P. 34/120	6158	5254	4591	4273	5221	6834	5388
C. P. 34/139	6835	4481	4378	3052	4374	4769	4648
Difference							
For P.=.05	1343	1374	904	896	902	1225	738[3]
For P.=.01	1794	1835	1208	1197	1205	1636	980

[1]Date of harvest.
[2] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).
[3] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially—others have not been released.

Tests on Heavy Soils

Confirming results obtained in previous years C.P. 34/120 proved a consistently good performer in heavy soil tests (tables 6, 7 and 8). In the average of plant cane, first and second stubble tests it surpassed its nearest competitor C.P. 29/116 by nearly 600 pounds in annual yield of sugar per acre and by 26.8 pounds in yield of sugar per ton of cane. In comparison with Co. 290 it maintained average advantages of more than 1200 pounds in yield of sugar per acre and 10.4 pounds in yield of sugar per ton of cane.

C.P. 807 again proved relatively unsatisfactory especially in stubble crops.

C.P. 33/372 and 33/409 were inferior to C.P. 34/120 in yield of sugar per acre and available sugar content, but satisfactory stubbling qualities displayed by C.P. 33/372 are considered worthy of note.

C.P. 31/551 which occurred in plant cane tests only gave relatively satisfactory results. It surpassed both C.P. 29/116 and Co. 290 in indicated production of sugar per acre and in quality of cane, but proved slightly inferior to C.P. 34/120.

TABLE 3—Results of second stubble variety tests on light soils in Louisiana during 1944.

Variety	Greenwood (Thibodaux) 10-16[1]	Godchaux (Raceland) 10-18	Oaklawn (Franklin) 10-23	Roland's Farm (Erath) 10-31	Stella (St. Martinville) 10-25	Alma (Lakeland) 11-13	Average
Average yield of cane per acre (tons)							
*Co. 281	17.8	15.4	8.0	6.3	6.6	7.0	10.18
*Co. 290	31.7	27.7	16.5	23.2	24.8	23.7	24.60
*C. P. 28/19	24.6	27.2	7.7	4.7	----	15.9	16.52[2]
*C. P. 29/103	27.0	16.5	10.0	9.6	26.9	24.8	19.13
*C. P. 29/116	22.3	27.6	15.7	15.3	29.2	33.8	23.98
*C. P. 29/120	23.9	27.5	16.2	11.8	26.4	22.4	21.37
*C. P. 29/320	23.0	26.1	9.6	6.1	20.9	19.6	17.55
C. P. 31/509	29.7	30.3	10.6	17.2	28.7	22.4	23.15
C. P. 31/529	23.6	16.9	8.6	18.1	21.5	23.6	18.72
C. P. 32/206	18.2	19.9	12.9	15.1	26.0	22.3	19.07
*C. P. 33/243	22.2	24.0	7.2	8.6	15.8	12.5	15.05
C. P. 33/372	25.2	25.0	18.6	17.7	23.5	25.6	22.60
C. P. 33/409	20.8	24.4	17.6	13.1	11.6	22.7	18.37
C. P. 34/1	27.7	33.0	21.7	23.1	28.8	23.7	26.33
C. P. 34/21	22.8	28.3	11.8	12.0	22.7	24.1	20.28
C. P. 34/53	23.7	24.0	----	17.7	27.5	28.1	22.70[2]
C. P. 34/54	22.4	26.6	----	----	22.4	21.4	19.88[2]
C. P. 34/75	17.6	21.2	----	5.4	17.6	17.2	14.35[2]
C. P. 34/80	28.9	28.4	----	10.1	24.6	19.6	20.87[2]
C. P. 34/86	27.5	22.3	----	22.2	26.8	22.0	22.67[2]
C. P. 34/92	28.4	28.9	----	14.0	26.5	31.4	24.38[2]
C. P. 34/115	25.6	21.1	----	9.6	20.2	16.2	17.13[2]
*C. P. 34/120	27.5	37.1	16.1	24.1	27.2	32.1	------
C. P. 34/139	26.3	32.7	17.1	32.2	28.1	26.9	27.22
Difference							
For P.=.05	5.47	6.07	5.26	5.03	3.08	5.20	7.10
For P.=.01	7.27	8.07	6.99	6.68	4.09	6.90	9.40
Average indicated yield of 96° sugar per ton of cane (pounds							
Co. 281	136.7	108.4	142.1	148.5	160.1	198.0	141.1
Co. 290	147.0	124.2	167.5	137.7	140.2	182.5	148.1
C. P. 28/19	164.6	132.2	168.3	149.5	----	222.7	164.0[2]
C. P. 29/103	139.2	101.8	160.7	107.0	157.6	209.0	152.4
C. P. 29/116	148.7	102.5	140.0	140.7	134.5	180.0	142.5
C. P. 29/120	175.8	127.8	164.1	135.8	161.0	208.0	162.9
C. P. 29/320	174.2	143.2	165.0	175.9	187.2	202.2	173.6
C. P. 31/509	117.8	100.4	138.6	109.0	127.5	199.8	129.7
C. P. 31/529	148.9	105.9	148.7	127.0	149.4	179.3	145.4
C. P. 32/206	170.9	139.1	157.0	194.2	154.0	210.7	170.7
C. P. 33/243	162.3	113.5	165.5	161.4	183.4	195.8	157.8
C. P. 33/372	156.9	136.3	166.3	109.4	142.8	186.5	151.3
C. P. 33/409	154.1	104.7	160.1	129.7	139.4	187.7	146.6
C. P. 34/1	146.4	112.8	142.7	131.4	129.2	184.8	139.3
C. P. 34/21	144.0	108.0	164.1	122.8	139.6	182.1	142.2
C. P. 34/53	154.3	110.0	127.2	123.4	151.4	170.6	142.3
C. P. 34/54	138.5	91.0	104.1	175.1	134.4	184.4	136.2
C. P. 34/75	144.2	103.1	144.6	168.4	141.0	185.0	143.1
C. P. 34/80	134.5	100.0	----	156.7	136.3	191.9	137.4[2]
C. P. 34/86	140.9	103.2	145.9	139.6	151.2	191.0	145.2
C. P. 34/92	157.2	111.7	146.0	125.3	155.2	170.8	146.4
C. P. 34/115	157.8	102.5	145.4	174.6	146.1	203.3	151.7
C. P. 34/120	163.8	133.9	156.0	174.1	156.0	194.8	162.6
C. P. 34/139	147.9	95.2	145.5	146.0	129.8	175.9	138.2
Difference							
For P.=.05	18.76	17.85	23.79	33.71	16.00	16.96	15.22[3]
For P.=.01	24.92	23.70	31.59	44.76	21.26	22.52	20.15
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	2433	1669	1137	936	1057	1386	1436
Co. 290	4660	3440	2764	3195	3477	4325	3643
C. P. 28/19	4049	3596	1296	703	----	3541	2710[2]
C. P. 29/103	3758	1680	1607	1027	4239	5183	2916
C. P. 29/116	3316	2829	2198	2153	3927	6084	3418
C. P. 29/120	4202	3514	2658	1602	4250	4659	3481
C. P. 29/320	4007	3738	1584	1073	3912	3963	3046
C. P. 31/509	3499	3042	1469	1875	3659	4476	3003
C. P. 31/529	3514	1790	1279	2299	3212	4231	2721
C. P. 32/206	3110	2768	2025	2932	4004	4699	3256
C. P. 33/243	3603	2724	1192	1388	2898	2447	2375
C. P. 33/372	3954	3407	3093	1936	3356	4774	3420
C. P. 33/409	3205	2555	2818	1699	1617	4261	2693
C. P. 34/1	4055	3722	3097	3035	3721	4380	3668
C. P. 34/21	3283	3056	1936	1474	3169	4389	2884
C. P. 34/53	3657	2640	----	2184	4163	4794	3231[2]
C. P. 34/54	3102	2421	----	----	3011	3946	2707[2]
C. P. 34/75	2538	2186	----	909	2482	3182	2054[2]
C. P. 34/80	3887	2840	----	1583	3353	3761	2867[2]
C. P. 34/86	3875	2301	----	3099	4052	4202	3291[2]
C. P. 34/92	4464	3228	----	1754	4113	5363	3570[2]
C. P. 34/115	4040	2163	----	1676	2951	3293	2599[2]
C. P. 34/120	4504	4968	2512	4196	4243	6253	4446
C. P. 34/139	3890	3113	2488	4701	3647	4732	3762
Difference							
For P.=.05	943	822	879	861	586	1067	1073[3]
For P.=.01	1253	1091	1168	1144	779	1417	1421

[1] Date of harvest.
[2] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).
[3] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially—others have not been released.

In the average of first and second stubble tests (tables 7 and 8) C.P. 31/509 fell significantly below C.P. 34/120 in production of sugar per acre and in available sugar content.

Tests on Muck Soil

The relatively unsatisfactory performance of C.P. 28/19 in muck soil tests on Clovelly Farms (table 9) reflects a condition which occurred extensively in commercial plantings at that station. The "failure" of C.P. 28/19 was apparently associated with extensive rotting of roots, a condition which proved critical under prevailing conditions of rainfall deficiency.

Of the unreleased varieties which have maintained satisfactory levels of sugar content under conditions of high soil fertility characterizing muck soils C.P. 35/14, C.P. 36/62 and C.P. 33/425 are considered among the most promising. These varieties, unlike C.P. 28/19 make relatively erect growth and will probably prove satisfactorily adaptable to mechanical harvesting. However, weak stubbling qualities may greatly limit their usefulness.

C.P. 36/75 and 33/310 maintained relatively high levels of available sugar content and gave satisfactory yields of cane per acre. C.P. 34/120, 33/253 and 29/320 were consistently high producers of sugar per acre with moderately satisfactory yields of sugar per ton of cane.

Discussion and Conclusions

It cannot be stated too emphatically that data presented in this report and the interpretation comprise an estimate of the relative performance of the different varieties tested under a given set of conditions. It is believed that relative varietal yields as observed may be taken as reasonably representative of the conditions involved. In arriving at generalizations from results of such tests, however, it should be recognized that yield values as actually observed are subject to important limitations inherent to all experimental data. In view of the possible effect of random variations in observed values, varietal averages as determined must be interpreted in the light of the underlying experimental error. It should be recognized also that the relative performance of different varieties within a given group may be materially influenced by prevailing weather conditions or other environmental factors and that relative

TABLE 4—Results of plant cane preliminary variety tests on light soils in Louisiana during 1944.

Variety	Godchaux (Raceland) 12-5[1]	Oaklawn (Franklin) 11-28	Albania (Jeanerette) 11-22	Roland's Farm (Erath) 11-20	Stella (St. Martinville) 11-18	Alma (Lakeland) 11-15	Average
Average yield of cane per acre (tons)							
*C. P. 281	13.7	16.1	21.3	19.4	20.2	20.6	18.55
*C. P. 28/19	14.6	16.3	19.4	15.5	24.2	26.0	19.33
*C. P. 34/120	28.3	26.0	24.2	20.5	29.3	40.4	28.12
C. P. 31/551	33.2	18.1	28.4	15.0	20.3	46.5	26.92
C. P. 34/141	27.1	17.3	24.7	18.5	29.0	36.6	25.53
C. P. 34/151	29.2	20.4	26.6	16.8	27.9	33.4	25.72
C. P. 35/14	18.4	17.7	18.3	14.7	21.8	16.0	17.82
C. P. 36/17	29.2	15.3	24.0	22.8	22.5	31.4	24.20
C. P. 36/19	23.8	19.3	25.5	19.4	25.8	30.2	24.00
C. P. 36/50	24.1	18.3	23.8	19.5	25.3	33.4	24.07
C. P. 36/80	37.0	22.0	33.2	22.6	30.1	40.8	30.95
C. P. 36/111	27.7	22.4	31.0	21.6	31.2	39.6	28.92
C. P. 36/161	34.7	21.2	29.5	23.7	29.9	43.0	30.33
C. P. 36/183	36.3	26.8	34.3	25.8	33.0	37.7	32.32
C. P. 36/185	28.5	24.5	20.5	23.7	25.7	33.8	26.12
C. P. 36/191	35.7	18.1	28.4	24.7	31.9	40.6	29.90
C. P. 37/9	31.9	20.6	24.7	22.5	25.1	35.0	26.63
C. P. 38/18	27.3	19.5	23.3	13.7	24.9	32.2	23.48
Difference							
For P.=.05	9.10	6.97	7.11	10.10	6.25	9.31	4.16[2]
For P.=.01	12.50	9.57	9.77	13.88	8.59	12.78	5.51
Average indicated yield of 96° sugar per ton of cane (pounds)							
Co. 281	165.7	221.1	202.1	172.1	176.7	190.3	188.4
C. P. 28/19	203.3	246.6	244.6	210.3	198.4	189.9	221.8
C. P. 34/120	181.5	213.8	222.2	170.4	177.7	161.6	185.5
C. P. 31/551	182.7	217.7	208.1	154.5	126.3	141.7	169.5
C. P. 34/141	155.3	195.0	196.6	192.9	164.0	152.7	172.0
C. P. 34/151	158.2	214.7	191.0	153.5	157.0	123.3	163.0
C. P. 35/14	221.9	251.3	222.0	211.6	190.5	223.2	219.1
C. P. 36/17	152.2	198.5	181.2	135.0	148.8	145.5	157.2
C. P. 36/19	186.2	234.3	203.7	162.8	177.8	186.2	191.1
C. P. 36/50	166.7	212.6	214.8	156.6	167.2	163.7	178.4
C. P. 36/80	136.9	172.2	163.2	133.2	151.7	121.8	144.4
C. P. 36/111	133.2	189.2	159.0	132.2	150.3	124.5	146.0
C. P. 36/161	150.1	200.4	192.7	152.9	159.3	121.4	158.0
C. P. 36/183	159.6	229.1	207.9	157.7	169.5	148.5	177.0
C. P. 36/185	157.8	218.1	205.5	168.0	155.4	153.6	173.7
C. P. 36/191	157.1	204.7	171.3	151.0	166.5	153.4	164.1
C. P. 37/9	151.5	198.8	176.8	133.9	153.5	137.4	156.3
C. P. 38/18	159.7	217.5	171.4	161.3	139.2	152.3	164.5
Difference							
For P.=.05	21.02	8.73	23.72	40.23	30.35	37.72	13.38[2]
For P.=.01	28.90	11.99	32.58	55.25	41.69	46.46	17.73
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	2270	3560	4305	3339	3569	3920	3494
C. P. 28/19	2968	4020	4745	3260	4801	4937	4288
C. P. 34/120	5136	5559	5377	3493	5207	6529	5217
C. P. 31/551	6066	3940	5910	2317	2564	6589	4564
C. P. 34/141	4209	3373	4856	3569	4756	5589	4392
C. P. 34/151	4619	4380	5081	2579	4380	4118	4193
C. P. 35/14	4083	4448	4063	3111	4153	3571	3905
C. P. 36/17	4444	3037	4349	3078	3348	4569	3804
C. P. 36/19	4432	4522	5194	3158	4587	5623	4586
C. P. 36/50	4017	3891	5112	3054	4230	5468	4295
C. P. 36/80	5065	3788	5418	3010	4566	4969	4469
C. P. 36/111	3690	4238	4929	2856	4689	4930	4222
C. P. 36/161	5208	4248	5685	3624	4763	5220	4791
C. P. 36/183	5793	6140	7131	4069	5593	5598	5721
C. P. 36/185	4497	5343	4213	3982	3994	5192	4537
C. P. 36/191	5608	3705	4865	3730	5311	6228	4908
C. P. 37/9	4833	4095	4367	3013	3853	4809	4162
C. P. 38/18	4360	4241	3994	2210	3466	4904	3862
Difference							
For P.=.05	1564	1494	1524	1831	1298	1846	808[2]
For P.=.01	2147	2052	2092	2515	1782	2536	1071

[1] Date of harvest.
[2] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially—others have not been released.

yields may be expected to vary materially from year to year and from place to place. Therefore it is quite possible that some of the less outstanding varieties as judged from results of these tests may display more conspicuous merit in future tests.

Exceedingly satisfactory yield qualities displayed in tests during the past 3 years entitle C.P. 34/120 to major consideration as a commercial variety. The availability of this variety combining excellent productivity with very satisfactory sugar content places growers of southern and southeastern parishes in a much more favorable position. C.P. 34/120 also promises to be an exceedingly valuable variety for heavy soils throughout the Sugar District.

Ironically enough, capacity for sustained growth at a rapid rate as reflected in its high yields of cane and sugar per acre, has accounted for two of the practical difficulties encountered with the variety under plantation conditions. C.P. 34/120 while an erect grower under favorable conditions is, because of its unusual height, readily blown over under conditions of moderate to high wind velocity, especially if the soil is wet. In the resulting lodged condition it cannot be readily harvested by mechanical means. Also, difficulty of a minor nature has been encountered in connection with loading operations because of the long stalks.

It should be mentioned that in occasional instances late fall plantings of C.P. 34/120 in 1944 gave defective stands apparently due to red rot damage. It is recommended that all plantings of this variety be made early enough to insure germination and satisfactory establishment of mother shoots prior to the onset of winter. This is considered especially important in the case of plantings on heavy soils. In tests conducted during the past, the variety has responded very satisfactorily to August and September planting.

The performance of C.P. 36/105, now in extensive increase plantings was generally satisfactory though somewhat under levels of productivity and sugar content maintained during 1943. This variety is considered resistant to red rot and in addition has not proved susceptible to stubble failure of the sort extensively encountered during 1944 and apparently associated with prolonged standing of the previous cane crop in

TABLE 5—Results of first stubble preliminary variety tests on light soild in Louisiana during 1944.

Variety	Godchaux (Raceland) 11-8[1]	Oaklawn (Franklin) 11-24	Albania (Jeanerette) 10-30	Roland's Farm (Erath) 11-1	Stella (St. Martinville) 11-16	Alma (Lakeland) 11-14	Average
Average yield of cane per acre (tons)							
*Co. 281	26.9	9.3	10.6	16.4	13.4	17.6	15.70
*C. P. 28/19	30.8	8.3	14.6	7.8	----	18.7	16.37[2]
*C. P. 34/120	35.5	27.8	24.3	28.2	31.0	31.3	29.68
C. P. 31/551	35.0	13.0	14.7	10.7	14.5	28.2	19.35
*C. P. 33/310	33.3	14.6	17.8	15.3	29.0	32.1	23.68
C. P. 33/485	23.5	11.1	16.8	11.9	24.0	24.0	18.55
C. P. 34/54	29.7	30.1	25.6	16.6	27.9	34.7	27.43
C. P. 34/141	30.7	8.6	16.6	14.0	25.3	28.4	20.60
C. P. 35/14	25.9	9.9	18.6	15.8	16.5	9.9	16.10
C. P. 36/17	25.7	18.6	19.3	18.1	17.8	27.4	21.15
C. P. 36/19	26.5	24.3	24.5	19.3	33.0	29.7	26.22
C. P. 36/55	33.6	20.9	18.3	17.4	30.3	28.2	24.78
C. P. 36/62	28.5	5.3	16.0	8.6	18.5	23.2	16.68
C. P. 36/75	32.8	27.7	19.8	19.6	22.9	33.3	26.02
C. P. 36/85	32.3	26.2	23.6	21.4	32.4	33.6	28.25
C. P. 36/94	34.6	25.6	25.6	22.4	29.3	35.6	28.85
C. P. 36/105	32.0	17.0	29.1	25.0	30.1	33.4	27.77
C. P. 36/191	35.0	17.8	22.8	18.0	27.9	33.5	25.83
Difference							
For P.=.05	11.43	10.56	9.15	7.37	8.53	9.65	3.90[3]
For P.=.01	15.69	14.50	12.57	10.13	11.72	13.25	5.17
Average indicated yield of 96° sugar per ton of cane (pounds)							
Co. 281	180.5	185.6	172.4	149.2	167.9	164.1	169.7
C. P. 28/19	197.4	220.3	174.0	168.2	----	196.2	191.6[2]
C. P. 34/120	186.9	202.7	173.3	134.7	170.3	180.0	175.2
C. P. 31/551	178.9	195.1	151.8	122.7	167.8	130.4	158.9
C. P. 33/310	180.4	193.1	128.8	129.5	169.6	159.9	162.9
C. P. 33/485	191.2	192.7	178.4	156.3	182.9	206.4	187.2
C. P. 34/54	146.0	170.6	160.1	149.2	136.4	119.0	145.7
C. P. 34/141	142.5	181.7	121.7	108.1	137.5	148.2	138.8
C. P. 35/14	197.9	201.0	177.0	163.7	185.7	217.7	188.5
C. P. 36/17	169.4	180.2	125.7	105.0	146.9	149.3	147.7
C. P. 36/19	197.7	221.8	161.8	137.9	170.7	202.6	183.7
C. P. 36/55	181.7	200.5	126.6	119.0	168.7	161.3	163.7
C. P. 36/62	206.7	224.8	198.0	114.4	212.2	211.6	200.5
C. P. 36/75	174.5	185.7	134.2	72.1	152.4	162.6	152.7
C. P. 36/85	165.8	195.6	143.3	115.4	149.5	139.9	152.7
C. P. 36/94	176.5	209.4	165.3	101.2	161.3	134.0	158.6
C. P. 36/105	185.3	196.5	165.6	108.4	178.5	177.8	168.7
C. P. 36/191	159.0	178.8	142.7	127.0	151.6	140.5	149.9
Difference							
For P.=.05	32.38	26.04	38.23	31.72	24.99	26.17	17.24[3]
For P.=.01	44.47	35.77	52.50	43.57	34.32	35.95	22.86
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	4855	1726	1827	2447	2250	2888	2665
C. P. 28/19	6080	1828	2540	1312	----	3669	3137[2]
C. P. 34/120	6635	5635	4211	3799	5279	5634	5199
C. P. 31/551	6261	2536	2232	1313	2433	3677	3075
C. P. 33/310	6007	2819	2293	1981	4918	5133	3858
C. P. 33/485	4493	2139	2997	1860	4390	4954	3472
C. P. 34/54	4336	5135	4099	2477	3806	4129	3997
C. P. 34/141	4375	1563	2020	1513	3479	4209	2860
C. P. 35/14	5126	1990	3292	2586	3064	2155	3035
C. P. 36/17	4354	3352	2426	1900	2615	4091	3123
C. P. 36/19	5239	5390	3964	2661	5633	6017	4817
C. P. 36/55	6105	4190	2317	2071	5112	4549	4057
C. P. 36/62	5891	1191	3168	984	3926	4909	3345
C. P. 36/75	5724	5144	2317	1413	3490	5415	3973
C. P. 36/85	5355	5125	3382	2470	4844	4701	4313
C. P. 36/94	6107	5361	4232	2267	4726	4770	4577
C. P. 36/105	5930	3340	4819	2710	5373	5939	4685
C. P. 36/191	5565	3183	3254	2286	4230	4707	3871
Difference							
For P.=.05	2277	2131	1614	1085	1530	1772	758[3]
For P.=.01	3127	2927	2217	1490	2101	2434	1005

[1] Date of harvest.
[2] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).
[3] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially—others have not been released.

TABLE 6—Results of plant cane variety tests on heavy soils in Louisiana during 1944.

Variety	Greenwood (Thibodaux) 12-10[1]	Oaklawn (Franklin) 11-28	Alma (Lakeland) 11-15	Average
Average yield of cane per acre (tons)				
*Co. 290	4.7**	31.4	26.1	20.73
*C. P. 807	18.2	22.8	28.6	23.20
*C. P. 29-116	19.9	24.4	32.0	25.43
C. P. 31-551	19.6	26.2	23.4	23.07
*C. P. 33-310	19.6	18.4	17.2	18.40
C. P. 33-372	16.3	21.1	21.8	19.73
C. P. 33-409	17.7	20.3	19.9	19.30
C. P. 34-92	10.3	23.5	26.5	20.10
*C. P. 34-120	17.0	25.1	28.4	23.50
C. P. 34-139	24.4	23.8	27.7	25.30
Difference				
For P.=.05	6.86	2.82	5.10	3.19[2]
For P.=.01	9.24	3.81	6.89	4.23
Average indicated yield of 96° sugar per ton of cane (pounds)				
Co. 290	191.4	195.5	162.2	181.2
C. P. 807	184.8	194.9	147.5	172.8
C. P. 29-116	160.9	194.2	141.5	163.4
C. P. 31-551	184.7	217.2	165.0	190.3
C. P. 33-310	181.4	192.5	179.5	184.5
C. P. 33-372	185.2	184.1	146.3	170.5
C. P. 33-409	196.0	198.4	152.9	182.0
C. P. 34-92	191.3	187.1	144.0	168.9
C. P. 34-120	199.1	203.1	183.0	194.0
C. P. 34-139	168.8	193.7	142.6	167.0
Difference				
For P.=.05	14.73	13.54	11.49	8.33[2]
For P.=.01	19.84	18.29	15.51	11.04
Average indicated yield of 96° sugar per acre (pounds)				
Co. 290	900	6139	4233	3757
C. P. 807	3363	4444	4218	4008
C. P. 29-116	3202	4738	4528	4156
C. P. 31-551	3620	5691	3861	4391
C. P. 33-310	3555	3542	3087	3395
C. P. 33-372	3019	3885	3189	3364
C. P. 33-409	3469	4028	3043	3513
C. P. 34-92	1970	4397	3816	3394
C. P. 34-120	3385	5098	5197	4560
C. P. 34-139	4119	4610	3950	4226
Difference				
For P.=.05	1291	640	845	600[2]
For P.=.01	1738	865	1142	795

[1] Date of harvest.
[2] Experimental error based on generalized error term for the 3 experiments.
* Varieties grown commercially—others have not been released.
** Low yield due to exceedingly gappy stand. Planting was followed by a long dry spell and the poor germination obtained reflects a charactistic weakness of Co. 290 under such conditions.

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TABLE 7—Results of first stubble variety tests on heavy soils in Louisiana during 1944.

Variety	Greenwood (Thibodaux) 11-10[1]	Oaklawn (Franklin) 11-24	Alma (Lakeland) 11-14	Average
Average yield of cane per acre (tons)				
*Co. 290	23.9	10.6	21.2	18.57
*C. P. 807	17.3	9.9	20.7	15.97
*C. P. 29-103	20.3	10.7	23.5	18.17
*C. P. 29-116	27.0	13.7	33.2	24.63
C. P. 31-509	23.8	18.5	28.1	23.47
C. P. 33-372	23.5	13.5	24.1	20.37
C. P. 33-409	20.3	16.9	26.2	21.13
*C. P. 34-120	25.4	19.0	29.3	24.57
C. P. 34-139	29.0	16.4	32.0	25.80
Difference				
For P.=.05	5.47	5.28	6.87	3.46[2]
For P.=.01	7.42	7.15	9.31	4.58
Average indicated yield of 96° sugar per ton of cane (pounds)				
Co. 290	179.4	191.5	196.0	188.0
C. P. 807	167.2	178.4	171.8	171.4
C. P. 29-103	190.5	193.8	179.4	186.4
C. P. 29-116	159.3	177.1	162.4	164.0
C. P. 31-509	157.2	185.4	186.4	176.2
C. P. 33-372	167.5	177.7	162.4	167.7
C. P. 33-409	173.7	177.8	182.9	178.6
C. P. 34-120	197.8	192.0	184.6	191.0
C. P. 34-139	159.1	180.1	137.5	154.6
Difference				
For P.=.05	11.47	15.01	16.58	8.59[2]
For P.=.01	15.57	20.34	22.47	11.39
Average indicated yield of 96° sugar per acre (pounds)				
Co. 290	4288	2030	4155	3491
C. P. 807	2893	1766	3556	2738
C. P. 29-103	3867	2074	4216	3386
C. P. 29-116	4301	2426	5392	4040
C. P. 31-509	3741	3430	5238	4136
C. P. 33-372	3936	2399	3914	3416
C. P. 33-409	3526	3005	4792	3774
C. P. 34-120	5024	3648	5409	4694
C. P. 34-139	4614	2954	4400	3989
Difference				
For P.=.05	1073	993	1271	1007[2]
For P.=.01	1454	1345	1723	1355

[1] Date of harvest.
[2] Experimental error based on generalized error term for the 3 experiments.
* Varieties grown commercially—others have not been released.

TABLE 8—Results of second stubble variety tests on heavy soils in in Louisiana during 1944.

Variety	Greenwood (Thibodaux) 10-16[1]	Alma (Lakeland) 11-13	Station (Houma) 10-25	Average
Average yield of cane per acre (tons)				
*Co. 290	29.4	23.9	21.1	24.80
*C. P. 807	24.5	9.7	17.3	17.17
*C. P. 28-11	28.5	29.7	22.4	26.87
*C. P. 29-103	22.9	23.7	20.9	22.50
*C. P. 29-116	33.1	37.2	25.6	31.97
C. P. 31-509	27.6	21.7	23.6	24.30
C. P. 33-372	28.7	24.6	26.2	26.50
C. P. 33-409	24.2	24.9	19.1	22.73
*C. P. 34-120	33.3	36.0	26.3	31.87
Difference				
For P.=.05	5.23	8.80	3.42	3.08[2]
For P.=.01	7.08	11.92	4.59	4.08
Average indicated yield of 96° sugar per ton of cane (pounds)				
Co. 290	131.1	188.6	174.9	162.0
C. P. 807	121.9	177.8	155.6	143.7
C. P. 28-11	129.3	179.7	191.1	165.0
C. P. 29-103	150.1	201.7	157.5	170.5
C. P. 29-116	120.2	178.9	163.5	154.5
C. P. 31-509	105.6	162.6	171.4	143.9
C. P. 33-372	134.0	177.9	171.0	159.8
C. P. 33-409	126.3	185.9	182.0	163.7
C. P. 34-120	151.5	192.0	190.5	177.5
Difference				
For P.=.05	14.13	18.92	12.63	4.43[2]
For P.=.01	19.14	25.64	16.94	5.87
Average indicated yield of 96° sugar per acre (pounds)				
Co. 290	3854	4508	3690	4017
C. P. 807	2987	1725	2692	2468
C. P. 28-11	3685	5337	4281	4434
C. P. 29-103	3437	4780	3292	3836
C. P. 29-16	3979	6655	4186	4940
C. P. 31-509	2915	3528	4045	3496
C. P. 33-372	3846	4376	4480	4234
C. P. 33-409	3056	4629	3476	3720
C. P. 34-120	5045	6912	5010	5656
Difference				
For P.=.05	786	1827	729	295[2]
For P.=.01	1066	2475	978	390

[1] Date of harvest.
[2] Experimental error based on generalized error term for the 3 experiments.
* Varieties grown commercially—others have not been released.

TABLE 9—Results of variety tests on muck soil at Clovelly Farms during 1944.

Variety	Plant Cane 12-1[1]			First Stubble 12-1			Second Stubble 11-6		
	Av. yield of cane per acre (Tons)	Av. indicated yield of 96° sugar		Av. yield of cane per acre (Tons)	Av. indicated yield of 96° sugar		Av. yield of cane per acre (Tons)	Av. indicated yield of 96° sugar	
		Per ton of cane (Pounds)	Per acre (Pounds)		Per ton of cane (Pounds)	Per acre (Pounds)		Per ton of cane (Pounds)	Per acre (Pounds)
*Co. 281	24.5	189.2	4,635	21.6	185.3	4,002	14.5	139.4	2,021
*C. P. 28/19	16.2	227.4	3,684	21.5	226.0	4,859	20.3	182.6	3,707
*C. P. 29/320	40.1	167.3	6,709	30.4	193.6	5,885	28.5	169.6	4,834
*C. P. 33/243							19.8	147.4	2,919
C. P. 33/253	32.6	178.9	5,832	33.4	193.1	6,450	35.9	158.4	5,687
*C. P. 33/310	23.0	192.7	4,432	28.0	206.9	5,793			
*C. P. 33/425	26.4	211.9	5,594						
C. P. 33/485	17.8	203.6	3,624						
C. P. 34/53				28.3	179.9	5,091	35.5	142.9	5,073
C. P. 34/92				28.2	161.3	4,549	34.1	141.9	4,839
*C. P. 34/120	36.8	175.4	6,455	33.3	183.6	6,114	41.0	158.9	6,515
C. P. 34/139							37.1	123.5	4,582
C. P. 34/167							26.9	141.8	3,814
C. P. 35/14	24.8	201.0	4,985	26.0	214.6	5,580			
C. P. 36/56				27.7	182.3	5,050			
C. P. 36/62	32.0	239.2	7,654	26.5	226.8	6,010			
C. P. 36/70				30.9	201.0	6,211			
C. P. 36/75	25.9	190.7	4,939	29.2	187.5	5,475			
C. P. 36/85	43.5	152.3	6,625	39.8	159.1	6,332			
C. P. 36/161	39.1	151.8	5,935						
C. P. 36/185	37.0	171.5	6,345						
C. P. 36/191				32.3	179.1	5,785	26.5	141.0	3,736
C. P. 36/193							23.6	145.2	3,427
C. P. 36/194							23.5	147.6	3,469
C. P. 36/195							24.9	150.1	3,737
C. P. 36/196							19.4	143.9	2,792
C. P. 36/197							34.6	174.8	6,048
C. P. 37/9	34.8	158.1	5,502						
C. P. 38/18	34.6	172.6	5,972						
Difference									
For P.=.05	5.22	18.56	1,129	6.26	15.68	1,280	6.59	17.17	1,102
For P.=.01	7.04	24.99	1,521	8.46	21.18	1,729	8.81	22.94	1,471

[1] Date of harvest.
* Varieties grown commercially—others have not been released.

a frozen condition. This variety ordinarily makes very erect growth and should prove satisfactorily adapted to mechanical harvesting.

C.P. 36/19, one of the varieties placed at secondary increase stations during 1944, again displayed satisfactory yield qualities and gave moderately high yields of sugar per ton of cane. This variety, while distinctly inferior to C.P. 28/19 in maturing qualities, could be advantageously harvested at a relatively early date. Because of its erect growth it should prove satisfactory for mechanical harvesting. C.P. 36-19 has displayed relatively good stubbling qualities.

C.P. 36/183, also advanced to increase status during 1944, may find advantageous utilization in competition with C.P. 34/120 under some conditions. Results obtained during 1944 would seem to fully justify further increase.

C.P. 34/139 proved approximately equal to C.P. 29/116 in indicated yields of sugar per acre and per ton of cane in heavy soil tests. It cannot compete with C.P. 34/120 under present conditions, but its performance would seem to justify its being retained in increase plantings as a "stand by" variety. Exceedingly good stubbling qualities and good growth type are considered notable qualities of this variety.

Signs of greatly reduced yield capacity displayed by C.P. 28/19 in muck soil tests must be regarded with some concern. This variety, is the only one of the present commercial varieties which has consistently afforded cane of acceptable sugar content on muck soil. The recently released variety C.P. 33/425 and several of the seedlings not yet released for commercial culture, notably C.P. 35/14 and 36/62, have shown encouraging promise and it is hoped that some of these may prove satisfactory substitutes for C.P. 28/19.

[1] The authors are indebted to Mr. L. G. Davidson, Associate Chemist, Division of Sugar Plant Investigations, for making juice analyses.

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Sugar Cane Test Fields—Season of 1944

By C. B. Gouaux
Louisiana State University and Agricultural and Mechanical College Agricultural Experiment Station, W. G. Taggart, Director

Sugar Cane Outfields

As in previous years, Experiment Station sugar cane variety work was at the same eight outfield locations. Most of the representative sugar cane soils of the state, consisting of Yazoo, Sharkey, Sarpy, Yahola, Lintonia, Olivier and Franklin, are included in the sugar cane variety test field project.

In 1944 there was a total of thirty-nine sugar cane varieties, of which nine were commercial field canes, and the others were unreleased varieties. All were under experimental cultivation as fall plant cane and stubble at the sugar cane outfields.

The varieties were worked according to the same system of farming used by cooperators in commercial production of sugar cane. All of the various operations, such as, land preparation, planting of cane, cultivation, fertilization and harvesting, were in conformity with the regular plantation systems. The planting of varieties and the obtaining of final results, which in the latter, involved weighing on plantation scales, milling tests and juice analyses of main plot varieties, was under the supervision of the Experiment Station with the cooperators providing the necessary facilities for the work.

The season of 1944 marked our third year of sugar production under World War II conditions. The labor shortage was more acute, weather conditions were considerably more unfavorable and sugar yields much lower than in 1943. In spite of these handicaps, the interest and cooperation in test field work was good, and this made it possible to obtain complete results at all of the test fields.

Fall Planting of Test Fields

The fall planting of Experiment Station test fields was during the period of September 20 to October 20. This phase of the work included the following plantings:

(1) Main plot tests:

(Cinclare, Glenwood and Reserve) Yazoo soil: C.P. Nos. 29-120, 29-320, 34-92, 34-120, 36-13, 36-105, 36-183 and 36-191.

(Cinclare) Sharkey: C.P. Nos. 29-116, 33-224, 34-21, 34-92, 34-120, 34-139, 36-105 and 36-191.

(Shirley and Meeker) Yahola: C.P. Nos. 29-320, 33-243, 34-120, 36-13, 36-19, 36-80, 36-105, 36-160, and 36-183.

(Caffery) Franklin: Co. 290, C.P. Nos. 29-116, 34-120, 36-13, 36-105, 36-183, 36-191 and F. 31-762.

(Billeaud and Youngsville) Lintonia and Olivier: Co. 290, F. 3-762, C.P. Nos. 29-116, 33-243, 33-310, 34-120, 36-13, 36-105, 36-111, 36-183 and 36-191.

(2) Introductory varieties:

Planted in small plots at the eight test fields: F. 36-671, F. 36-819, C.P. Nos. 38-26, 36-178, 36-197 and 36-203.

(3) Increases of promising varieties (unreleased):

Test Field	Location	Approximate Acreages C. P. 36-19	C. P. 36-105	C. P. 36-183
Cinclare	Cinclare	0.0	8.0	4.0
Glenwood	Napoleonville	4.0	9.0	5.0
Reserve	Reserve	1.0	7.0	4.0
Meeker	Meeker	0.0	5.0	0.5
Shirley	Bunkie	0.0	8.0	4.0
Sterling	Franklin	0.0	1.0	1.0
Billeaud	Broussard	0.0	2.5	2.0
Youngsville	Youngsville	0.0	1.0	0.75

The location of Sterling test field in St. Mary parish near Franklin, was changed to Katy plantation, which is about three miles west of the Sterling location. The new test field was planted October 5-6, 1944 and will be known as the Caffery test field.

Evaluation and Tabulation of Results

The final results of the test fields for the season of 1944 are presented in tables Nos. 1 to 8 inclusive. Complete information on rainfall is given in Table A, and Table B gives data on freezes during the first two and the last two months of 1944.

The series of eight tables have six uniform headings, which are as follows: (1) Variety; (2) Normal Juice; (3) Tons per acre; (4) Value per ton and per acre; (5) Less $1.00 per ton (harvesting expense); and (6) Balance per acre. The "Balance" column figures show the actual ranking of varieties, starting with the highest and ending with the lowest in money value per acre.

The "Louisiana Sugar Cane Contract," which is in general use for purchasing cane by the raw sugar houses of the state was used for obtaining comparative data and information in connection with field and milling results and the actual value of varieties. In all of the calculations, a basis of 11½ to 12½ per cent sucrose in normal juice was used for standard cane; a cost figure of $1.00 per ton for harvesting expenses and an average par price of $3.86 per ton of standard cane. The latter is an average of weekly 96 test raw sugar quotations for the period of October 19, 1944 through January 18, 1945, of the Sugar and Rice Exchange and the Cane Products Trade Association, Inc., of New Orleans, Louisiana.

TABLE A—Rainfall at the Test Fields—Season of 1944.

Location	Jan.		Feb.		March		April		May		June		July		August		Sept.		October		Nov.		Dec.		Total	
	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.
Cinclare	9	7.52	5	4.17	7	4.09	8	4.40	9	4.54	7	3.51	11	2.88	17	8.99	7	3.41	4	1.54	7	7.09	6	1.55	98	53.69
Napoleonville	5	9.95	6	5.27	7	3.98	7	4.86	5	7.85	6	3.51	5	2.88	11	6.70	5	6.15	1	0.75	6	9.24	5	2.39	69	63.53
Reserve	8	7.70	13	4.42	11	3.70	13	5.29	8	7.83	8	2.00	8	3.62	13	4.81	10	3.22	3	1.49	11	8.95	7	2.50	113	55.53
Franklin	9	9.29	9	8.79	10	4.17	8	4.00	7	7.88	10	8.73	11	6.39	15	8.34	12	6.68	2	2.07	10	12.65	8	3.74	111	82.73
Cheneyville	8	9.05	5	4.04	6	8.57	10	4.44	10	8.50	4	3.03	5	3.32	14	9.55	5	2.11	1	2.03	6	6.51	7	6.15	81	67.30
Meeker	6	10.04	11	4.01	7	8.35	7	4.86	9	6.23	4	2.74	6	4.99	8	6.36	3	2.70	1	1.85	7	7.39	8	7.05	77	66.57
Broussard	3	5.34	5	3.15	5	3.72	3	2.41	7	7.40	2	1.21	7	4.80	17	7.98	6	5.42	2	1.83	8	8.00	8	4.90	73	56.16
Youngsville	5	5.89	5	3.60	4	3.82	2	2.79	5	6.88	4	2.94	7	4.26	11	7.43	8	6.24	3	2.59	5	8.25	6	4.23	65	58.92

NOTES

The rainfall data of Cinclare, Reserve, Franklin and Cheneyville were taken from the "Climatological Data" of the U. S. Department of Commerce, Weather Bureau, New Orleans, Louisiana. The data for Napoleonville, Meeker, Broussard and Youngsville are from the records of tests field cooperators.

TABLE 1—Cinclare Test Field

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yazoo)								
C. P. 34-92	16.06	12.27	76.40	32.90	$3.86	$126.99	$32.90	$94.09
C. P. 29-320	16.31	13.08	80.20	30.43	4.08	124.15	30.43	93.72
C. P. 34-120	16.25	12.95	79.69	29.77	4.03	119.97	29.77	90.20
C. P. 29-120	15.96	12.56	78.70	27.56	3.88	106.93	27.56	79.37
C. P. 36-161	14.95	10.75	71.91	32.68	3.28	107.19	32.68	74.51
C. P. 33-243	14.70	11.42	77.69	26.52	3.80	100.78	26.52	74.26
C. P. 33-425	17.22	14.19	82.40	19.66	4.51	88.67	19.66	69.01
C. P. 36-160	14.16	10.51	74.22	32.42	3.10	100.50	32.42	68.08
C. P 36-80	14.08	9.93	70.53	30.39	2.65	80.53	30.39	50.14
Fall Plant Cane (Sharkey)								
C. P. 34-139	15.96	11.81	74.00	18.79	3.86	72.53	18.79	53.74
C. P. 29-116	16.54	12.75	77.09	17.00	3.97	67.49	17.00	50.49
C. P. 34-21	17.22	14.35	83.33	13.53	4.57	61.83	13.53	48.30
C. P. 34-92	16.93	13.04	77.02	15.58	4.07	63.41	15.58	47.83
C. P. 34-120	17.44	14.23	81.59	12.95	4.53	58.66	12.95	45.71
First Stubble (Yazoo)								
C. P. 34-120	15.71	12.56	79.95	25.33	3.88	98.28	25.33	72.95
C. P. 34-139	15.42	11.50	74.58	24.06	3.86	92.87	24.06	68.81
C. P. 36-105	15.04	12.02	79.92	23.96	3.86	92.49	23.96	68.53
C. P. 29-120	15.96	13.07	81.89	21.88	4.08	89.27	21.88	67.39
C. P. 29-320	16.68	13.71	82.19	20.18	4.33	87.38	20.18	67.20
C. P. 34-92	15.51	11.86	76.47	22.23	3.86	85.81	22.39	63.58
C. P. 34-115	15.71	11.90	75.75	21.66	3.86	83.61	21.66	61.95
C. P. 33-243	14.74	12.19	82.70	20.39	3.86	78.71	20.39	58.32
C. P. 36-55	15.61	12.51	80.14	20.22	3.86	78.05	20.22	57.83
C. P. 29-103	15.61	12.08	77.39	18.08	3.86	69.79	18.08	51.71
C. P. 31-509	14.57	11.02	75.63	20.48	3.49	71.48	20.48	51.00
C. P. 36-183	13.83	10.40	75.20	21.67	3.01	65.23	21.67	43.56
First Stubble (Sharkey)								
C. P. 34-21	15.45	12.15	78.64	18.72	3.86	72.26	18.72	53.54
C. P. 33-224	15.42	12.10	78.47	17.61	3.86	67.97	17.61	50.36
C. P. 34-120	15.32	11.83	77.22	14.75	3.86	56.94	14.75	42.19
C. P. 33-409	17.00	13.75	80.88	11.46	4.34	49.74	11.46	38.28
C. P. 29-116	15.61	11.63	74.50	13.05	3.86	50.37	13.05	37.32
C. P. 36-75	15.74	11.62	73.82	8.98	3.86	34.66	8.98	25.68
C. P. 31-529	16.59	12.66	76.31	8.05	3.92	31.56	8.05	23.51
Second Stubble (Yazoo)								
C. P. 34-120	14.60	11.35	77.74	24.93	$3.74	$93.24	$24.93	$68.31
C. P. 34-21	14.64	11.31	77.25	21.12	3.71	78.36	21.12	57.24
C. P. 33-425	16.48	13.10	79.49	17.84	4.09	72.97	17.84	55.13
C. P. 33-243	15.13	12.08	79.84	17.73	3.86	68.44	17.73	50.71
C. P. 33-372	14.54	10.87	74.76	21.12	3.37	71.17	21.12	50.05
C. P. 29-320	14.99	12.67	84.52	15.75	3.93	61.90	15.75	46.15
C. P. 28-19	15.38	11.94	77.63	12.61	3.86	48.67	12.61	36.06

NOTES

Fall Plant Cane (Yazoo and Sharkey): Planted October 4, 1943 and harvested December 4, 1944. Cut by hand, top and bottom and burned. Loaded, weighed and tested on big mill Cinclare Central Factory, 7:00 to 10:30 p. m., December 5, 1944.

First Stubble (Yazoo and Sharkey): Planted September 28, 1942. Harvesting dates: November 30, 1943 and November 1, 1944. Cut by hand, top and bottom and burned. Loaded, weighed and tested on big mill Cinclare Central Factory, 7:00 to 10:30 p.m., November 2, 1944.

Second Stubble (Yazoo): Planted September 18,1941 . Harvesting dates: November 18, 1942, October 28, 1943 and November 1, 1944. Cut by hand, top and bottom and burned. Mill tests Cinclare Central Factory, 7:00 to 10:30 p.m.. November 2, 1944.

TABLE B—Temperatures of 32 Degrees and Below Freezing Season of 1944

(Expressed in Degrees Fahrenheit

Date	Cinclare	Napoleonville	Reserve	Cheneyville	Franklin	Broussard
1/9	30	31	28	27	32	30
1/10	24	23	28	24	27	24
1/16	32	27	29	27	29	29
2/12	27	28	32	27	31	27
2/13	32	32	Above 32	31	Above 32	Above 32
11/30	30	31	Above 32	29	Above 32	32
12/3	31	29	Above 32	25	Above 32	Above 32
12/11	28	30	29	26	29	28
12/12	26	28	27	26	29	28
12/13	30	30	28	26	Above 32	29
12/14	28	28	30	28	30	28
12/15	25	25	27	32	29	28
12/19	31	Above 32	30	27	Above 32	32
12/20	28	Above 32	32	31	32	32

NOTES

The data for Cinclare, Reserve, Cheneyville and Franklin were taken from "Climatological Data" of the U. S. Department of Commerce, Weather Bureau, New Orleans, Louisiana. Other locations were from plantation records as follows: Elm Hall Plantation, Napoleonville, La., and Billeaud Sugar Factory Broussard, La.

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Summary—Season of 1944

The tabulated data in Tables Nos. 1 to 8 inclusive, give the results of sugar cane variety work of the fall plant cane and stubble test fields of the Experiment Station for the season of 1944. The sugar yields throughout the cane belt were lower than in 1943. The weather conditions were unfavorable for normal cane development; starting with a cold wet spring, followed with a prolonged drouth in June and July, and ending with late rains, a mild fall and December freezes.

The promising unreleased variety, C.P. 36-105, made a fine showing at the eight test fields. It is a very vigorous growing cane, with excellent germinating and stubbling qualities. The habit of growth is open type stooling, with very slightly crooked medium diameter stalks, reddish brown in color. This cane showed better milling qualities than C.P. 34-120, being about in the same class as C.P. 29-320. In five out of a total of nine comparative tests, C.P. 36-105 outranked C.P. 34-120. Its performance on the test fields for the past three years has been outstanding, and according to the available information it is recommended for release as commercial cane for some sections of the cane belt.

C.P. 36-183 another promising unreleased variety, showed up well at several of the test fields. In comparative tests it surpassed C.P. 34-120, four out of nine times. This variety is slower in germination than C.P. 36-105, and has the following characteristics: medium diameter, reclining stalks, greenish brown in color and milling qualities about in the class of C.P. 29-116. It performed best at Glenwood, Sterling, Shirley and Billeaud outfields.

For the past three years C.P. 34-92 has been classed as a promising unreleased variety. In 1944 it made a creditable showing; ranking first twice and being in the upper bracket of high ranking canes in many of the tests. This variety compares very favorably with C.P. 34-120 in field performance, but is definitely lower from a sucrose standpoint. In a total of fifteen comparative tests, C.P. 34-120 outranked C.P. 34-92 ten times. C.P. 34-92 has the following characteristics: red in color, small diameter, erect, good germinating and stubbling qualities, well adapted to mechanical harvesters and is slightly harder than C.P. 29-320 from a milling standpoint. The variety is still on trial at test fields and is also on an increase basis at secondary fields.

The promising new variety C.P. 36-13, was planted on the Experiment Station outfields on an introductory basis in the fall of 1943, Germination and growth of this variety was only fair in comparison with the best commercial canes. It is a large barrel, green and fairly erect growing cane. The results of small mill analyses show that at Cinclare it was 0.53%

TABLE 2—Glenwood Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yazoo)								
C. P. 36-160	15.95	12.82	80.38	33.47	$3.98	$133.21	$33.47	$99.74
C. P. 36-191	14.93	11.97	80.17	33.65	3.86	129.89	33.65	96.24
C. P. 36-183	16.05	13.09	81.56	30.35	4.09	124.13	30.35	93.78
C. P. 34-92	15.54	12.27	78.96	31.58	3.86	121.90	31.58	90.32
C. P. 36-80	14.88	11.05	74.26	35.92	3.51	126.08	35.92	90.16
C. P. 36-105	15.90	12.87	80.94	28.76	4.00	115.04	28.76	86.28
C. P. 34-120	15.54	12.32	79.28	28.22	3.86	108.93	28.22	80.71
C. P. 36-161	14.87	11.30	75.99	27.95	3.71	103.69	27.95	75.74
C. P. 36-179	14.67	11.08	75.53	28.11	3.54	99.51	28.11	71.40
C. P. 29-320	15.44	12.44	80.57	23.06	3.86	89.01	23.06	65.95
C. P. 29-120	16.05	12.07	75.20	22.47	3.86	86.73	22.47	64.26
C. P. 34-139	14.06	9.90	70.41	34.61	2.62	90.68	34.61	56.07
First Stubble (Yazoo)								
C. P. 34-92	17.05	13.08	76.72	30.96	4.08	126.32	30.96	95.36
C. P. 36-183	16.69	11.07	66.33	30.98	3.53	109.36	30.98	78.40
C. P. 34-120	15.64	11.04	70.59	30.12	3.50	105.42	30.12	75.30
C. P. 34-139	16.21	12.27	75.69	26.03	3.86	100.48	26.03	74.45
C. P. 36-105	15.35	10.74	69.97	32.53	3.27	106.37	32.53	73.84
C. P. 29-120	16.97	12.97	76.43	22.11	4.04	89.32	22.11	67.21
C. P. 36-55	15.40	10.98	71.30	26.96	3.46	93.28	22.96	66.32
C. P. 33-243	15.11	11.46	75.84	22.35	3.83	85.60	22.35	63.25
C. P. 36-191	15.25	10.70	70.16	27.72	3.24	89.81	27.72	62.09
C. P. 34-115	16.86	12.82	76.03	20.80	3.98	82.78	20.80	61.98
C. P. 29-103	17.01	12.26	72.08	18.89	3.86	72.92	18.89	54.03
C. P. 28-19	15.40	11.40	74.03	16.41	3.78	62.03	16.41	45.62
F. 31-962	18.10	14.28	78.90	12.83	4.55	58.38	12.83	45.55
C. P. 31-509	14.46	9.94	68.74	25.50	2.66	67.83	25.50	42.33
Second Stubble (Yazoo)								
C. P. 31-509	15.69	11.74	74.82	27.06	3.86	104.45	27.06	77.39
C. P. 34-120	16.65	11.77	70.69	23.25	3.86	89.75	23.25	66.50
C. P. 33-243	15.78	11.60	73.51	21.26	3.86	82.06	21.26	60.80
C. P. 34-115	16.11	12.52	77.72	19.71	3.87	76.28	19.71	56.57
C. P. 33-372	16.12	11.81	73.26	19.48	3.86	75.19	19.48	55.71
C. P. 36-19	16.78	12.40	73.90	18.83	3.86	72.68	18.83	53.85
C. P. 31-551	16.48	11.83	71.78	18.00	3.86	79.48	18.00	51.48
C. P. 34-92	16.71	10.46	62.60	24.14	3.06	73.87	24.14	49.73
C. P. 36-85	15.09	10.66	70.64	22.50	3.21	72.23	22.50	49.73
C. P. 33-425	16.43	12.48	75.96	16.88	3.86	65.16	16.88	48.28
C. P. 34-21	16.11	10.83	67.23	18.40	3.34	61.46	18.40	43.06
C. P. 33-485	15.49	10.96	70.76	17.53	3.44	60.30	17.53	42.77
C. P. 36-55	16.52	11.98	72.52	14.82	3.86	57.21	14.82	42.39
C. P. 33-409	15.97	12.05	75.45	14.29	3.86	55.16	14.29	40.87
Second Stubble (Yazoo)								
C. P. 34-1	17.23	12.69	73.65	13.43	3.93	52.78	13.43	39.35
C. P. 34-139	15.45	10.90	70.55	13.42	3.40	45.63	13.42	32.21
C. P. 31-529	16.57	11.04	66.63	11.63	3.50	40.71	11.63	29.08
C. P. 28-19	14.56	10.71	73.56	9.13	3.25	29.67	9.13	20.54

NOTES

Fall Plant Cane (Yazoo): Planted September 24, 1943 and harvested December 5-6, 1944. Heavy rain after cane was cut, and a slow rain on December 6 at the time that mill tests were being run at Glenwood Factory.

First Stubble (Yazoo): Planted September 30, 1942. Harvesting dates: November 19, 1843, and October 27, 1944. All machine cut, except C. P. Nos. 36-161, 36-183 and 36-191.

Second Stubble (Yazoo): Planted September 19, 1941. Harvesting dates: November 19, 1942, October 22, 1943 and October 26, 1944. All varieties harvested by hand, top and bottom, and burned.

TABLE 3—Reserve Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yzaoo)								
C. P. 36-105	15.01	11.57	77.08	40.97	$3.86	$158.14	$40.97	$117.17
C. P. 34-120	13.74	10.69	77.80	36.75	3.82	140.39	36.75	103.64
C. P. 36-179	14.22	10.64	74.82	41.67	3.20	133.34	41.67	91.67
C. P. 29-320	14.73	11.72	79.57	30.50	3.86	117.73	30.50	87.23
C. P. 36-191	14.86	10.73	72.21	36.83	3.27	120.43	36.83	83.60
C. P. 36-160	14.24	10.54	74.02	36.14	3.12	112.76	36.14	76.62
C. P. 34-92	13.79	10.40	75.42	37.62	3.01	113.24	37.62	75.62
C. P. 36-161	13.84	10.48	75.72	33.81	3.07	103.80	33.81	69.99
C. P. 31-509	14.03	10.07	71.77	39.62	2.76	109.35	39.62	69.73
C. P. 34-425	13.74	10.32	75.11	31.43	2.95	92.72	31.43	61.29
C. P. 29-120	13.17	10.26	77.90	28.04	2.90	81.32	28.04	53.28
C. P. 36-183	13.45	10.13	75.32	27.59	2.80	77.25	27.59	49.66
C. P. 32-206	15.50	10.46	67.48	22.06	3.06	67.50	22.05	45.44
C. P. 36-80	13.54	9.55	70.53	28.26	2.35	66.41	28.26	38.15
First Stubble (Yazoo)								
C. P. 34-120	16.28	12.89	79.18	31.29	4.01	125.47	31.29	94.18
C. P. 36-75	17.16	13.42	78.21	26.39	4.22	111.37	26.39	84.98
C. P. 36-55	16.09	12.46	77.44	29.09	3.86	112.29	29.09	83.20
C. P. 36-161	15.98	12.04	75.34	28.20	3.86	108.85	28.20	80.65
C. P. 34-139	15.89	11.31	71.18	29.25	3.71	108.52	29.25	79.27
C. P. 34-92	16.52	12.59	76.21	27.22	3.89	105.89	27.22	78.67
C. P. 34-53	16.38	12.02	73.38	27.42	3.86	105.84	27.42	78.42
C. P. 29-120	16.83	13.45	79.91	22.80	4.23	96.44	22.80	73.64
C. P. 36-183	16.57	12.23	73.81	25.69	3.86	99.16	25.69	73.47
C. P. 31-509	15.56	11.84	76.09	25.21	3.86	97.31	25.21	72.10
C. P. 34-115	15.41	11.79	76.51	25.11	3.86	96.92	25.11	71.81
C. P. 36-191	16.05	12.44	77.51	25.11	3.86	96.92	25.11	71.81
C. P. 32-206	17.00	13.02	76.59	21.97	4.06	89.20	21.97	67.23
C. P. 36-185	15.67	11.84	75.56	23.50	3.86	90.71	23.50	67.21
C. P. 29-103	17.16	13.37	77.91	20.76	4.20	87.19	20.76	66.43
C. P. 28-19	17.65	14.29	80.96	16.21	4.55	73.76	16.21	57.55
Second Stubble (Yazoo)								
C. P. 34-120	16.55	13.00	78.55	29.89	4.05	121.05	29.89	91.16
C. P. 34-92	15.57	11.52	73.99	29.29	3.86	113.06	29.29	83.77
C. P. 33-372	16.24	12.79	78.75	27.66	3.97	109.81	27.66	82.15
C. P. 34-21	16.48	13.22	80.22	25.82	4.14	106.89	25.82	81.07
C. P. 36-19	16.13	12.79	79.29	25.37	3.97	100.72	25.37	75.35
C. P. 33-409	15.62	12.16	77.85	24.75	3.86	95.54	24.75	70.79
C. P. 28-19	17.08	13.53	79.22	21.21	4.25	90.14	21.21	68.93
C. P. 36-85	16.59	12.75	76.85	23.25	3.96	92.07	23.25	68.82
C. P. 33-243	16.58	13.45	81.12	20.43	4.23	86.42	20.43	65.99
Second Stubble (Yazoo)								
C. P. 33-425	16.20	12.97	80.06	21.06	4.04	85.08	21.06	64.02
C. P. 36-55	16.40	12.68	77.32	21.66	3.93	85.12	21.66	63.46
C. P. 34-115	15.86	12.57	79.26	21.96	3.89	85.42	21.96	63.46
C. P. 36-75	16.83	12.95	76.95	20.90	4.03	84.23	20.90	63.33
C. P. 34-139	15.07	10.89	72.26	22.59	3.39	76.58	22.59	53.99

NOTES

Fall Plant Cane (Yazoo): Planted October 3, 1943 and harvested December 5-6, 1944. Cut by hand, top and bottom, and burned. Mill tests Reserve Factory, December 6, 1944.

First Stubble (Yazoo): Planted September 15, 1942. Harvesting dates: November 18, 1943 and November 22, 1944. Cane cut by hand, top and bottom, and burned. Mill tests Reserve Factory.

Second Stubble (Yazoo): Planted October 1, 1941. Harvesting dates: November 20, 1942, November 17, 1943 and November 20, 1944. Cane cut by hand, top and bottom, and burned. Mill tests Reserve Factory November 22, 1944.

sucrose less than C.P. 29-320 on December 4, and at Meeker, 0.64% sucrose under C.P. 29-320 on October 23. The sucrose tests were very satsifactory at both places. All available seed cane of the C.P. 36-13 variety was planted.

On Sharkey soil at Clinclare, C.P. 34-139 made the best showing as plant cane, while C.P. 34-21 was the leading variety as first stubble. In the previous season, C.P. 34-21 and C.P. 34-120, were the leading varieties as plant cane and first stubble. Both years, C.P. 33-224, performed well, being second highest ranking variety. The three unreleased varieties, C.P. Nos. 33-224, 34-21 and 34-139, which are extremely

TABLE 4—Meeker Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yahola)								
C. P. 36-105	15.99	11.58	72.42	35.56	$3.86	$137.26	$35.56	$101.70
C. P. 33-243	15.01	11.27	75.08	36.60	3.68	134.69	36.60	98.09
C. P. 34-120	16.09	11.88	73.83	33.62	3.86	129 77	33.62	96.15
C. P. 29-320	16.86	13.23	78.47	30.37	4.14	125.73	30.37	95.36
C. P. 33-425	16.86	12.28	72.84	29.45	3.86	113.68	29.45	84.23
C. P. 36-179	15.21	10.86	71.40	32.20	3.37	108.51	32.20	76.31
C. P. 36-17	15.01	9.67	64.42	37.83	2.45	92.68	37.83	54.85
C. P. 36-161	14.23	9.14	64.23	37.60	(Salvage Cane)			
C. P. 37-5	14.62	9.30	63.61	36.18	(Salvage Cane)			
First Stubble (Yahola)								
C. P. 34-120	15.40	13.31	86.43	37.83	4.17	157.75	37.83	119.92
C. P. 33-425	15.89	13.45	84.64	32.53	4.23	137.60	32.53	105.07
C. P. 33-243	15.40	12.61	81.88	34.38	3.90	134.08	34.38	99.70
C. P. 34-92	14.53	10.90	75.02	40.65	3.40	138.21	40.65	97.56
C. P. 29-320	14.14	12.53	88.61	32.75	3.87	126.74	32.75	93.99
C. P. 36-55	13.65	10.39	76.11	42.92	3.00	128.76	42.92	85.84
C. P. 36-161	13.84	9.81	70.88	51.97	2.56	133.04	51.97	81.07
C. P. 36-75	14.04	10.37	73.86	38.32	2.99	114.58	38.32	76.26
C. P. 36-185	15.21	12.34	81.13	26.45	3.86	102.10	26.45	75.65
C. P. 34-115	16.87	9.88	58.57	38.09	2.61	99.41	38.09	61.32
C. P. 36-105	13.16	9.58	72.80	41.49	2.38	98.75	41.49	57.26
C. P. 36-80	13.55	9.18	67.75	42.37	(Salvage Cane)			
Second Stubble (Yahola)								
C. P. 34-120	14.14	11.50	81.33	46.23	3.86	178.45	46.23	132.22
C. P. 33-243	14.33	11.50	80.25	37.92	3.86	146.37	37.92	108.45
C. P. 33-310	16.87	12.79	75.82	35.23	3.97	139.86	35.23	104.63
C. P. 34-21	14.62	11.04	75.51	40.48	3.50	141.68	40.48	101.20
C. P. 34-79	15.01	11.86	79.01	33.10	3.86	127.77	33.10	94.67
C. P. 29-320	15.89	12.78	80.43	31.87	3.97	126.52	31.87	94.65
C. P. 33-425	16.96	13.81	81.43	25.33	4.37	110.69	25.33	85.36
Third Stubble (Yahola)								
C. P. 33-243	15.11	12.50	82.73	35.69	3.86	137.76	35.69	102.07
C. P. 34-21	14.92	10.86	72.79	36.00	3.37	121.32	36.00	85.32
C. P. 34-120	15.11	12.11	80.15	28.37	3.86	109.51	28.37	81.14
C. P. 29-320	15.21	12.55	82.51	27.10	3.88	105.15	27.10	78.05
C. P. 33-310	14.92	11.01	73.79	31.13	3.48	108.33	31.13	77.20
C. P. 33-425	15.70	12.81	81.59	20.62	3.98	82.07	20.62	61.45
C. P. 28-19	15.70	12.51	79.68	20.00	3.86	77.20	20.00	57.20
C. P. 34-79	14.62	10.86	74.28	21.72	3.37	73.20	21.72	51.48

NOTES

Fall Plant Cane (Yahola): Planted October 11, 1943. Harvested December 11-12, 1944. Cut by hand, top and bottom, and burned. Mill tests Meeker Factory, December 12, 1944.

First Stubble (Yahola): Planted October 6, 1942. Harvesting dates: December 15, 1943, and November 15-17, 1944. Cut by hand, top and bottom, and burned. Mill tests Meeker Factory, November 16, 1944.

Second Stubble (Yahola): Planted October 14, 1941. Harvesting dates: December 2, 1942, November 5, 1943 and November 15, 1944. Cut by hand top and bottom, and burned. Mill tests Meeker Factory, November 17, 1944.

Third Stubble (Yahola): Planted October 10, 1940. Harvesting dates: November 15, 1941, November 3, 1942, December 5, 1943 and November 16, 1944. Cut by hand, top and bottom, and burned. Mill Tests Meeker Factory, November 17, 1944.

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TABLE 5—Shirley Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yahola)								
C. P. 34-120	16.04	12.27	76.50	35.84	$3.86	$138.34	$35.84	$102.50
C. P. 34-92	15.94	11.17	70.08	38.79	3.61	140.03	38.79	101.24
C. P. 36-183	15.26	11.03	72.28	37.20	3.50	130.20	37.20	93.00
C. P. 29-320	15.94	12.31	77.23	31.76	3.86	122.59	31.76	90.83
C. P. 33-425	16.33	12.39	75.87	30.85	3.86	119.08	30.85	88.23
C. P. 33-243	15.36	12.02	78.26	29.49	3.86	113.83	29.49	84.34
C. P. 36-191	15.55	10.97	70.55	33.80	3.45	116.61	33.80	82.81
C. P. 36-105	15.11	10.41	68.89	37.66	3.02	113.73	37.66	76.07
C. P. 36-161	15.36	10.58	68.88	29.95	3.15	94.34	29.95	64.39
C. P. 36-160	14.77	10.00	67.70	31.08	2.70	83.92	31.08	52.84
C. P. 36-179	14.97	10.00	66.80	28.58	2.70	77.17	28.58	48.59
C. P. 36-80	13.99	9.21	65.83	31.99	(Salvage Cane)			
First Stubble (Yahola)								
C. P. 34-120	15.41	11.64	75.54	45.78	3.86	176.71	45.78	130.94
C. P. 36-105	16.87	13.58	80.50	36.03	4.28	154.21	36.03	118.18
C. P. 36-55	16.38	12.42	75.82	40.56	3.86	156.56	40.56	116.00
C. P. 29-320	16.19	13.15	81.22	36.93	4.11	151.78	36.93	114.85
C. P. 34-92	15.89	11.43	71.93	38.75	3.81	147.64	38.75	108.89
C. P. 34-53	14.24	10.21	71.70	37.66	2.86	145.37	37.66	107.71
C. P. 33-243	15.41	12.48	80.99	35.57	3.86	137.30	35.57	101.73
C. P. 28-19	16.87	13.48	79.91	31.30	4.24	132.71	31.30	101.41
C. P. 33-425	17.06	14.50	84.99	26.72	4.63	123.71	26.72	96.99
C. P. 36-183	15.02	11.26	74.97	36.25	3.67	133.04	36.25	96.79
F. 31-962	18.43	15.51	84.16	22.64	5.02	113.65	22.64	91.01
C. P. 36-19	15.50	11.99	77.35	22.64	3.86	87.39	22.64	64.75
C. P. 34-139	41.63	9.73	66.51	39.88	2.49	99.30	39.88	59.42

NOTES

Fall Plant Cane (Yahola): Planted September 30, 1943 and harvested December 11, 1944. Cane cut and stripped by hand. Mill tests at Augusta Factory, December 13, 1944. Observations on milling with 6 rolls, knives and Krajewski crusher: C. P. Nos. 34-120, 36-55, 36-19, 36-55, 34-53, 34-92 and 33-425 are all hard milling canes; C. P. 36-160, very hard milling. C. P. 28-19, 29-320 and 36-105 milled with regular feed and can be classed as good. C. P. 33-243, C. P. 36-80 and C. P. 36-183 also milled well.

First Stubble (Yahola): Planted September 22, 1942. Harvesting dates: December 4, 1943 and November 13, 1944. Cane cut and stripped by hand. Mill tests at Augusta Factory, November 14, 1944.

TABLE 6—Sterling Test Field

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Franklin silty clay loam)								
C. P. 36-105	17.18	14.25	82.95	27.30	$4.54	$123.94	$27.30	$96.64
C. P. 36-183	16.38	13.27	81.01	26.51	4.16	110.28	26.51	83.77
C. P. 36-191	15.87	12.93	81.47	25.89	4.03	104.34	25.89	78.45
C. P. 29-116	15.59	12.28	78.77	26.76	3.86	103.29	26.76	76.53
C. P. 34-92	16.99	13.24	77.93	24.09	4.15	99.97	24.09	75.88
C. P. 34-120	16.06	13.01	81.01	24.43	4.06	99.19	24.43	74.71
Co. 290	15.73	12.52	79.59	25.51	3.87	98.72	25.51	73.21
C. P. 36-160	15.13	11.60	76.67	23.68	3.86	91.40	23.68	67.72
C. P. 34-139	15.04	11.39	75.73	18.87	3.76	72.84	18.87	53.97
C. P. 33-310	16.10	12.38	76.89	16.33	3.86	63.03	16.33	46.70

Fall Plant Cane (Franklin silty clay loam): Planted October 6, 1943 and harvested December 22, 1944. Cane cut by hand, top and bottom, and burned. The analyses were made from five stalk samples by the Oaklawn Factory Laboratory, through the courtesy of Messrs. M. L. Marquette, Manager, and D. P. McBrayer, Factory Superintendent, South Coast Corporation, Franklin, Louisiana. Samples were taken by the writer on December 19, 1944.

TABLE 7—Billeaud Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Lintonia)								
C. P. 36-183	15.31	11.12	72.63	32.90	$3.57	$117.45	$32.90	$84.55
C. P. 33-310	18.28	14.32	78.34	23.58	4.56	107.52	23.58	83.94
Co. 290	15.89	11.54	72.62	28.37	3.86	109.51	28.37	81.14
C. P. 31-509	15.69	11.41	72.72	28.30	3.79	107.26	28.30	78.96
C. P. 36-191	15.98	11.29	70.65	29.24	3.70	108.19	29.24	78.95
C. P. 33-243	16.67	12.61	75.64	25.84	3.90	100.78	25.84	74.94
C. P. 36-105	15.28	10.94	71.60	30.72	3.43	105.37	30.72	74.65
C. P. 29-116	16.09	10.58	65.76	34.11	3.15	107.45	34.11	73.34
C. P. 34-120	16.08	12.39	77.05	25.30	3.86	97.66	25.30	72.36
C. P. 34-92	18.23	13.20	72.41	23.04	4.13	95.16	23.04	72.12
C. P. 36-161	15.35	10.56	68.79	30.33	3.13	94.93	30.33	64.60
C. P. 34-143	17.20	13.28	77.21	17.43	4.16	72.51	17.43	55.08
First Stubble (Lintonia)								
C. P. 34-120	16.13	12.47	77.31	37.10	3.86	143.21	37.10	106.11
C. P. 33-409	16.76	13.39	79.89	30.34	4.20	127.43	30.34	97.09
C. P. 36-55	16.32	12.57	77.02	31.79	3.89	123.66	31.79	91.87
Co. 290	15.05	10.93	72.62	37.47	3.42	128.15	37.47	90.68
C. P. 34-92	15.90	10.89	70.71	37.16	3.39	125.97	37.16	88.81
C. P. 33-310	17.00	13.15	77.35	28.52	4.11	117.22	28.52	88.70
C. P. 36-75	15.69	11.86	75.59	30.80	3.86	118.89	30.80	88.09
C. P. 33-243	15.25	12.45	81.64	30.25	3.86	116.77	30.25	86.52
C. P. 34-139	16.22	12.06	74.35	27.90	3.86	107.69	27.90	79.79
C. P. 34-115	15.69	12.66	80.69	26.73	3.92	104.78	26.73	78.05
C. P. 34-21	15.25	11.39	74.69	26.10	3.78	98.66	26.10	72.56
C. P. 31-509	14.42	10.80	74.90	28.36	3.32	94.16	28.36	65.80
C. P. 36-191	14.37	10.13	70.49	26.06	2.80	72.97	26.06	46.91
C. P. 29-116	14.76	9.60	65.04	32.63	2.39	77.99	32.63	45.36

NOTES

Fall Plant Cane (Lintonia): Planted October 1, 1943 and harvested November 29-30, 1944. Cane cut by hand, top and bottom. and burned. Mill tests Billeaud Factory, December 1, 1944.

First Stubble (Lintonia): Planted September 24, 1942. Harvesting dates: December 4, 1943 and November 10, 1944. Cane cut by hand, top and bottom, and burned. Mill tests Billeaud Factory, November 11, 1944.

TABLE 8—Youngsville Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Olivier)								
C. P. 36-161	15.68	12.36	78.83	28.04	$3.86	$108.23	$28.04	$80.19
C. P. 34-120	16.11	12.45	77.28	23.89	3.86	92.22	23.89	68.33
C. P. 33-310	17.25	13.49	78.20	19.65	4.24	83.32	19.65	63.67
Co. 290	15.06	11.00	73.04	24.63	3.47	85.47	24.63	60.84
C. P. 36-160	15.30	11.34	74.12	21.88	3.74	81.83	21.88	59.95
C. P. 36-111	15.68	11.71	74.68	20.77	3.86	80.17	20.77	59.40
C. P. 29-116	15.11	10.66	70.55	24.60	3.21	78.97	24.60	54.37
C. P. 34-139	16.25	12.24	75.32	18.90	3.86	72.95	18.90	54.05
C. P. 33-243	15.63	12.62	80.74	17.56	3.91	68.66	17.56	51.10
C. P. 36-80	15.11	11.16	73.86	17.77	3.60	63.97	17.77	46.20
C. P. 29-120	15.87	12.27	77.27	15.59	3.86	60.18	15.59	44.59
Second Stubble (Olivier)								
C. P. 34-120	17.48	13.83	79.12	19.15	4.37	83.69	19.15	64.54
C. P. 33-310	17.01	12.86	75.60	16.15	4.00	64.60	16.15	48.45
C. P. 33-372	15.96	12.01	75.25	13.45	3.86	51.91	13.45	38.47
C. P. 29-116	16.15	12.25	75.85	12.95	3.86	49.99	12.95	37.04
C. P. 34-139	16.91	12.55	74.22	12.30	3.88	47.72	12.30	35.42
C. P. 34-21	15.39	11.70	76.02	11.65	3.86	44.97	11.76	33.32
C. P. 33-409	17.10	13.94	81.52	8.25	4.42	36.47	8.25	28.22
C. P. 33-224	16.06	12.61	78.52	9.55	3.90	37.25	9.55	27.70
Co. 290	15.77	12.17	77.17	9.15	3.86	35.32	9.15	26.17

NOTES

Fall Plant Cane (Olivier): Planted October 18, 1943. Harvested November 29-30, 1944. Cane cut and stripped by hand. Small mill analyses of 20 stalks random samples, made at the small mill laboratory of the Youngsville Factory on November 30, 1944.

Second Stubble (Olivier): Planted September 25, 1942. Harvesting dates: December 10, 1943 and November 7-8, 1944. Cane cut and stripped by hand. Small mill analyses of 20 stalks random samples were made at the small mill laboratory of the Youngsville Factory on November 8, 1944.

promising as black land prospects, have been planted as main plats for additional data and information.

C.P. 36-105 which made a favorable showing as plant cane in 1943 and as first stubble in 1944 on the black land test field at Cinclare, was also included in the series of main plot tests.

C.P. 34-120 made the best showing according to the averages of results of the two Red river section test fields. C.P. 33-243 was second high ranking variety at Meeker, while at Shirley C.P. 29-320 showed up better than C.P. 33-243.

C.P. 29-320 is still the most important field cane in the Red river and upper Mississippi river alluvial soils, due to its superiority in the following important qualities: early maturity, erectness, adaptability to soil and climate, higher sucrose and better adaptation to mechanical harvesters.

C.P. 29-120 continues to be an important field cane in the areas of the Cinclare, Glenwood and Reserve test fields.

In the test field results of the season of 1944, C.P. 34-120 duplicated its performance of the previous year in being the most outstanding cane on the Experiment Station test fields. Its splendid response on the alluvial soils of the Mississippi and Red river areas, and the Teche and western sections of the cane belt, as fall plant cane and stubble, demonstrated fine adaptability to the various soil types.

In the western section of the state where Co. 290 and C.P. 29-116 are the predominant field canes, C.P. 34-120 exceeded both of these varieties in three out of four tests. C.P. 33-310 which was released especially for this area, ranked second and likewise surpassed Co. 290 and C.P. 29-116 three out of four times.

These two commercial field canes, C.P. 34-120 and 33-310, are more earlier maturing and higher in sucrose than Co. 290 and C.P. 29-116. Both varieties also have the very important additional advantage of being excellent canes for mechanical harvesters.

Acknowledgments

The writer wishes to express sincere thanks and appreciation to the following cooperators for valuable assistance in their untiring efforts in connection with the test field work during the trying season of 1945:

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Sugar Research at the Audubon Sugar Factory During the 1944 Season

By C. W. Stewart

Superintendent, Audubon Sugar Factory, College of Engineering, Louisiana State University

Mill Tests on Clean and Trashy Cane

The purpose of this report is to present data obtained by comparative milling tests of clean and trashy cane as conducted at the Audubon Sugar Factory during the past season.

The five tests made are divided into two groups. The first group comprising Tests 1, 2, and 3, were made to observe the effect of trash on the milling operation and purity drop between crusher juice and mixed juice. The second group, or Tests 4 and 5, were made to observe, not only the effect of trash on milling, but also to determine the theoretical recovery of the products, that is, sugar and molasses.

The tests in Group 1 were made in the following manner: two bundles of cane of the same variety and from the same location, hand cut top and bottom, were weighed. One bundle was opened and the trash removed by hand, placed in another set of slings, and reweighed. The difference in weights was noted as the weight of trash. This figure was checked by making a direct weighing of the trash removed.

The two bundles of cane were then milled under, as nearly as possible, the same milling conditions with respect to mill speed, pressure, feed, and maceration.

The time required for milling each bundle of cane was recorded and the mill slippage was also observed. Samples of crusher juice, mixed juice, residual juice, and bagasse were taken and analyses made, the results of which are shown in Table 1, 2 and 3.

The type of trash referred to in these tests was a mixed trash, part dry and part green.

In making the tests designated as Group 2, larger amounts of cane were used and a comparative milling test was made between burned cane, as a method of cleaning in the field, and cane cut top and bottom.

The per cent trash in these tests was determined by cleaning about 100 pounds cane and calculating the percentage of trash by weight. The trash was classifed as dry trash.

The burned cane practically free of trash, was weighed and milled, the time of milling noted, also the weights of juice and bagasse. Samples of crusher juice, mixed juice, residual juice and bagasse were collected and analyzed. The theoretical recovery of sugar and molasses was calculated by applying the Winter and Carp formulae.

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The trashy cane was treated in the same manner and all results were listed in Tables 4 and 5.

In discussing trash as it comes with the cane to the cane milling plants here in Louisiana, we must recognize the fact that there are various types. First, there is the green trash, the largest per cent of which comes from the green leaves and tops in short cane which is not removed by the mechanical harvester. The second type is a mixed trash in which about half is dry and the other half is green, the dried part being caused by the ripening process of the cane. The third type of trash might be called dry trash, noted principally after a frost has killed all the leaves of the cane. A fourth type of trash is wet trash, which might include any of the above-mentioned types wet by rains. This class of trash brings a certain amount of soil with it to the factory and, when tests are made, will show a higher percentage due to increased weight caused by the soil. Wet trash also has a tendency to dilute the juices, thus lowering the per cent solids and sucrose.

TABLE 1

Test 1	Clean Cane	Trashy Cane
Date	Oct. 31, '44	Oct. 31, '44
Amount of cane milled	3350 lbs.	3150 lbs.
Time milling	7 minutes	8.5 minutes
Cane per minute	423 lbs.	370.6 lbs.
% Trash		11.58
Reduced grinding rate		12.38%
Crusber Juice Brix	17.11°	16.51°
Crusher Juice Sucrose	14.03	13.03
Crusher Juice Purity	81.99	79.92
Dilute Juice Brix	13.31°	11.30°
Dilute Juice Sucrose	10.57	8.15
Dilute Juice Purity	79.41	72.12
Purity drop, Crusber to Dilute	2.58	7.80
Residual Juice Brix	7.89°	7.49°
Residual Juice Sucrose	5.97	5.07
Residual Juice Purity	75.66	67.69
Bagasse Sucrose	3.65	2.53
Bagasse Moisture	46.00	43.50
Bagasse Fiber	49.18	52.77

TABLE 2

Test 2	Clean Cane	Trashy Cane
Date	Nov. 4, '44	Nov. 4,' 44
Amount of cane milled	8755 lbs.	6110 lbs.
Time milling	19 minutes	16 minutes
Cane per minute	455.5 lbs.	381.9 lbs.
% Trash		10.84
Reduced nilling rate		16.15%
Crusher Juice Brix	16.61°	15.70°
Crusher Juice Sucrose	13.36	11.57
Crusher Juice Purity	80.43	73.31
Dilute Juice Brix	14.54°	12.92°
Dilute Juice Sucrose	11.56	9.03
Dilute Juice Purity	79.50	69.89
Purity Drop	.93	3.42
Residual Juice Brix	7.12°	6.92°
Residual Juice Sucrose	5.59	4.21
Residual Juice Purity	78.23	60.84
Bagasse Sucrose	3.82	2.87
Bagasse Moisture	45.20	49.10
Bagasse Fiber	49.92	46.19

TABLE 3

Test 3	Clean Cane	Trashy Cane
Date	Nov. 9, '44	Nov. 9, '44
Amount cane milled	2920 lbs.	3980 lbs.
Time milling	7 minutes	12 minutes
Cane milled per minute	417.1	331.7
% Trash		10.89
Reduced milling rate		20.47%
Crusher Juice Briz	16.44°	16.76°
Crusher Juice Sucrose	12.81	12.69
Crusher Juice Purity	77.92	75.71
Dilute Juice Brix	14.36°	14.06°
Dilute Juice Sucrose	10.85	10.05
Dilute Juice Purity	75.56	71.48
Purity Drop	2.36	4.23
Residual Juice Brix	7.68°	6.02°
Residual Juice Sucrose	5.49	4.04
Residual Juice Purity	71.48	67.11
Bagasse Sucrose	3.55	3.28
Bagasse Moisture	46.50	47.40
Bagasse Fiber	48.54	47.72

TABLE 4

Test 4	Clean Cane (Burned)	Trashy Cane (Green and Dry Trash)
Date of test	Nov. 20, '44	Nov. 20, '44
Amount of cane milled	32,510 lbs.	26,740 lbs.
Time milling	1:15	1:15
Cane milled per minute	433.5 lbs.	356.5 lbs.
% Trash in cane	clean	12.15
Reduced grinding rate		17.47%
Lbs. dilute Juice	30,305	25,162
Lbs. Bagasse	10,771	9,477
Bagasse % of cane	33.13	35.44
Bagasse, % Sucrose	3.58	3.41
Bagasse, % Moisture	42.40	46.20
Bagasse, % Fiber	52.90	49.14
Crusher Juice Brix	16.54	16.48
Crusher Juice Sucrose	13.35	13.20
Crusher Juice Purity	80.71	80.10
Dilute Juice Brix	14.82	14.20
Dilute Juice Sucrose	11.81	11.07
Dilute Juice Purity	79.69	77.96
Purity Drop, Crusher to Dilute	1.02	2.14
Residual Juice	7.99	7.97
Residual Juice Sucrose	6.08	5.38
Residual Juice Purity	76.09	73.14
Dilute Juice Extraction % Cane	93.22	94.10
Sucrose Extracted % Sucrose in Cane	90.26	89.60
96 pol. Sugar per ton cane	195.51	182.60
77.8 Brix Molasses per ton Cane	9.07	9.52
Total Value of Products	$ 8.96	$ 8.55

TABLE 5

Test 5	Clean Cane (Burned)	Trashy Cane (Cut top and bottom—dry trsh)
Date of test	Dec. 15, '44	Dec. 15, '44
Amount of cane milled	87,640	52,020
Time milling	3:26	2:26
Cane milled per minute	425.5 lbs.	344.5 lbs.
% Trash		11.49
Reduced grinding rate		16.45%
Lbs. Dilute Juice	78,354	46,056
Lbs. Bagasse	24,877	15,476
Bagasse % Cane	28.38	29.75
Bagasse % Sucrose	2.64	1.87
Bagasse % Moisture	42.00	40.50
Bagasse % Fiber	54.36	56.80
Crusher Juice Brix	16.19°	15.00°
Crusher Juice Sucrose	12.90	11.31
Crusher Juice Purity	79.69	75.40
Dilute Juice Brix	12.64°	10.91°
Dilute Juice Sucrose	9.97	8.01
Dilute Juice Purity	78.87	73.41
Purity Drop, Crusher to Dilute	.82	1.99
Residual Juice Brix	6.08°	5.77°
Residual Juice Sucrose	4.41	3.99
Residual Juice Purity	72.50	69.15
Dilute Juice Extracted % Cane	89.41	88.70
Sucrose extracted % Sucrose in Cane	92.24	92.73
96° Sugar per ton cane	157.40	120.2
77.8° Brix Molasses per ton cane	7.71	8.13
Total Value	$ 7.29	$ 5.97

Green Tops and Sucrose Test

This test was made to show the effect of green tops on the sucrose content of cane.

About 50 stalks of cane were tested. These canes were cleaned and the tops cut off at the bud or spread of the leaves. Twelve inches were cut from the top of all the stalks, weighed and milled in a small power mill by passing through three times. The extracted juice was weighed, and samples were taken of the juice and bagasse. A second twelve inches was cut from all the stalks and the same procedure followed. The remainder of the stalk was milled, juice and bagasse sampled. All samples were tested and results are shown in Table 6 below.

Colum D of Table 6 is a mathematical average of the results if the sample had been milled all together. By referring to the Table for purchase of cane on sucrose test, we find that:

The whole cane, 11.18% sucrose in normal juice = 94.0% Standard Cane

Less one, 12 inch section, 11.61% sucrose in normal juice =100% Standard Cane

Less two, 12 inch sections, 12.81% sucrose in normal juice =105.5% Standard Cane

TABLE 6

	A First 12' Inches	B Second 12' Inches	C Remainder of Stalk	D Totals
Weight of sample	7 lbs.	13.50	101.50	122.00
Weight of Juice	3.30	9.70	73.00	86.00
Normal Extraction	47.14	71.85	71.92	70.49
Weight of Bagasse	3.70	3.80	28.50	36.00
Juice Brix	7.93	9.94	15.90	14.92
Juice Sucrose	0.37	2.57	12.81	11.18
Juice Purity	4.66	25.85	80.56	74.93
Bagasse Sucrose	0.42	2.11	3.60	3.12
Bagasse Moisture	64.80	57.90	44.80	48.24
Bagasse % Cane	52.86	28.15	28.08	29.51
Sucrose Extraction	44.04	75.66	90.11	89.54

Test With Munson Cross Grooving

This test was made to follow up an experiment begun at the Audubon Sugar Factory several years ago when three test rolls were purchased by the American Sugar Cane League for experimental purposes. These rolls were designed to be used in the last mill.

The first season they were used wihtout any grooving. In a report covering the operation of the Audubon Sugar Factory for the season, 1941, by Arnold and Keller, Sugar Bulletin, June 15, 1942, a 12 per cent power reduction was estimated but no milling data was given. However, it was suggested that the smooth rolls be tried again in the 1942 season in order that more data might be obtained.

In 1942 according to a report by Etheredge in the *Sugar Bulletin,* March 15, 1943, the test rolls were prepared with 1/8 in. grooving and about the last of the season were put in the back mill for a test run of five days. The milling data with the test rolls, 1/8 in. grooving, was compared to that of the regular rolls, ½ in. grooving, and was found to be inferior in several respects; lost time, reduced grinding rate, and lower extraction.

At the beginning of the 1944 season the test rolls, with a 1/4 in. grooving were installed in the back mill and used until October 31, a period of twelve days. At the end of this period the test rolls were removed and the regular rolls ½ in. pitch were put in. These were used until near the end of the season, but the figures were taken to cover the mill work done in twelve grinding days so that the time and amount of cane would compare with the first test finished October 31.

A few days before the end of the season the test rolls with the 1/4 in. grooving and the Munson Cross Grooving with a high turn plate setting were put back in the last mill.

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The data from these three tests is entered in Table 7.

Due to poor carrier feeding equipment, it is hard to maintain a regular feed of the mills for this reason the ammeter indictator needle vibrates considerably, but using the ½ in. groove rolls and the conventional turn plate setting the power flow was between 350 and 400. After installing the ¼ in. grooved rolls with the cross grooving in the top roll, the flow was between 300° and 350 as shown by the recording charts we have.

At the end of the season the top rolls of all mills were removed and the last mill with the high turn plate and cross grooved top roll was found to have a clean turn plate where the other mills with the low plate setting were found to have an 1.5 in. mat of bagasse on top of the turn plate.

TABLE 7

	Oct. 31 1/4 in. groove on last mill	Nov. 16 1/2 in. groove on last mill	Dec. 14 1/4 in. groove and Munson cross groove on last mill
Tons cane milled	707.50	704.30	171.93
Tons cane milled per hour	10.44	10.89	12.96
Maceration % cane	24.04	17.49	26.70
Normal Extraction	72.05	73.46	73.71
Dilute Extraction	90.12	86.24	93.90
Sucrose Extraction	89.14	89.62	91.82
% Sucrose in Bagasse	3.14	3.14	2.46
Moisture in Bagasse	45.64	45.46	43.13

I would like to take this opportunity to extend my thanks to Mr. E. C. Simon and Mr. F. W. Berthelot of the University's Agricultural Experimental Station and also to Mr. Dan. Burden a planter from whom we purchase cane, for their splendid cooperation.

Cane Sugar Handbook

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	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
Raw Sugar 96°	244,208	257,710	291,313	396,955	356,166	177,021	252,176	305,802	316,719	259,324
Clarified Raw Value	15,284	18,254	18,172	11,161	8,423	1,294	2,731	4,233	17,402	19,892
Turbinados	13,757	12,661	21,367	27,022	23,345	16,373	25,425	25,889	34,262	40,405
Granulated	57,037	82,236	55,235	47,590	45,145	37,464	31,991	51,182	60,663	46,924
Washed Raws	3,809	2,782	3,094	122	939	1,236	7,776	8,694	0	0
String—Others	6,797	9,870	10,934	5,781	2,844	1,407	2,144	2,529	2,924	2,834
Sirup—Gallons	1,902,955	2,078,011	1,454,108	1,531,000	1,824,127	1,567,318	1,705,220	1,802,624	4,458,137	2,684,925
1st Molasses	2,463,309	2,461,463	1,809,692	2,256,616	1,896,291	1,224,042	2,142,987	3,301,640	5,936,230	3,661,082
2nd Molasses	2,227,996	2,491,480	2,052,608	1,720,463	3,214,954	1,481,536	2,734,639	4,420,460	4,754,073	3,260,918
Blackstrap	20,818,081	27,712,266	29,902,333	34,379,122	27,891,109	15,384,342	21,560,072	23,103,373	30,887,281	28,716,392
Total Sugars	340,892	383,513	400,115	488,631	436,862	239,095	322,243	398,330	431,970	369,379
Tons of Cane Ground	4,179,645	4,942,525	5,295,268	5,909,846	5,128,321	2,978,516	4,021,903	4,791,134	5,546,129	4,928,686

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Entries of Sugar From Offshore Areas Through April 30, 1945

(Official Release)

The Sugar Branch of the Office of Marketing Services announced recently that the quantity of sugar entered for consumption from all offshore areas during January-April amounted to 1,983,926 short tons, raw value. For the corresponding period last year the quantity entered totaled 1,580,233 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 118,351 short tons of sugar, raw value, was marketed by the main cane area and 231,429 tons by the continental beet area during January-March as compared with 169,146 tons and 251,342 tons, respectively, during the same period of 1944.

Area	Quantity entered through April 30
	(short tons—96° equivalent)
Cuba	1,656,016
Hawaii	195,108
Puerto Rico	103,245
Foreign countries other than Cuba	29,557
Total	1,983,926

DIRECT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through April 30.

Area	Quantity entered through April 30		
	Sugar polarizing 99.8° and above	Sugar polarizing less than 99.8°	Total
	(short tons, 96° equivalent		
Cuba	87,764	4,153	91,917
Puerto Rico	18,953	545	19,498
Total	106,717	4,698	111,415

ENTRIES FROM FULL-DUTY COUNTRIES

Area	Quantity entered through April 30[1]
	(pounds)
French West Indies	59,113,923
Tons	29,557

[1] Excluding the first 20,000 pounds entered. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

NOTICE OF MEETING

The Labor Committee of the American Sugar Cane League will meet

at 2:30 P. M.

June 22

at the

Agricultural Building

Thibodaux, La.

to consider matters to be presented at a labor hearing which is to be held on June 26 by the War Food Administration.

All growers and processors are invited to attend the meeting as the Committee is anxious to secure all the suggestions possible.

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Plan Big For '46

By C. J. Bourg

The sugar shortage bids fair to become the ill wind which blows good will and appreciation for the domestic production of sugar. At no time within the memory and experience of your Washington Representative have so many members of Congress and so many officials of the Federal Government concerned themselves with increasing the production of sugar within the United States.

The appointment of Congressman Clinton P. Anderson to be Secretary of Agriculture and War Food Administrator came within a few days after his very complete report on the sugar situation, based upon the investigation of the House Committee Investigating Food Shortage, of which he is Chairman. The recommendations of the Committee include recognition of the extreme need for the maximum production of domestic sugar in 1945 and 1946. It also includes a recommendation for the appointment of a sugar co-ordinator.

The President has now appointed as Under-Secretary of Agriculture John B. Hutson who has had a supervisory and a policy-making relationship with sugar problems since 1934. Mr. Hutson has demonstrated a fair-mindedness and thoroughness in his handling of sugar problems while occupying top offices in the AAA, the WFA, and the CCC. True enough, he has not agreed in each instance with the domestic industry but always he has been willing to give consideration and to explain his reasons for the action taken.

Secretary Anderson and Under-Secretary Hutson are taking on very tough assignments. Food shortages will become worse before they begin to get better. In the case of sugar, the stocks are so low and the crop prospects such that no relief is in sight for at least 15 months. Presently, Louisiana seems to have the only crop in 1945 which will show a substantial increase over last year. The beet area will have a better crop but still far from approaching a normal crop. The Philippines will furnish little sugar until 1947. Under these conditions, the production of sugar in Louisiana was never more important in a national sense.

Little can be done with respect to the 1945 crop, outside of taking steps to insure the saving of the entire crop and converting it into sugar to meet the needs of American consumers and of our Government. Now is the time to plan for the 1946 crop

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to be the biggest in Louisiana history. A maximum acreage can be prepared for planting this fall. Each grower should review his farming program and give every consideration to plans for increasing his sugarcane acreage.

The price for sugarcane in 1945 is estimated at 7.00 per ton, including the conditional payments under the Sugar Act and support payments by CCC. For the 1946 crop, the American Sugar Cane League is asking that the incentive program be announced well in advance of the planting of the crop.

From the standpoint of the processor, the CCC now has under consideration the request that support payments be offered to insure processors against loss through payments which will offset increases in cost of production and actual losses in processing operation. An announcement in this regard is expected very shortly.

The WPB announced changes in its regulations in order that processing equipment and machinery may be obtained with less difficulty. A similar loosening of the controls and limitations affecting farm machinery will make it possible to increase the number of harvesters, loaders and trucks to be used in sugarcane operations.

Fertilizer will be available to fill the requirements of sugarcane farms, provided that orders are placed well in advance and early delivery dates accepted. In 1944, this program proved very successful and all growers who ordered fertilizer in advance and accepted early delivery were able to obtain what they needed.

As a gesture of cooperation to the new Secretary of Agriculture, the American Sugar Cane League urges its growers to begin planning immediately to make the 1946 crop the top performance in Louisiana sugar history.

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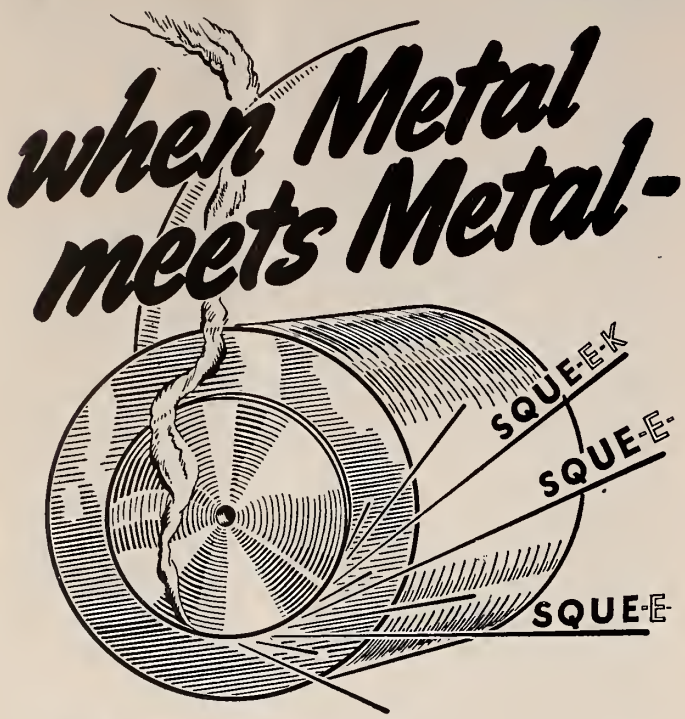

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Program for Sales of Surplus Trucks in Farm Areas

(*Official Release*)

Areas where trucks are urgently needed to prevent impairment of farm production will be allocated reasonable quantities of available surplus trucks under a sales procedure announced by the Office of Surplus Property, Department of Commerce, and the War Food Administration.

Developed jointly by the agencies, the program provides for sales of allocated trucks to dealers who agree to resell the trucks to farmers and farmers' cooperative associations within the designated area who hold AAA certificates.

The method whereby the special agricultural priorities authorized under Surplus Property Board Regulation 3 will be applied to surplus trucks is as follows:

1. The Office of Surplus Property will keep liaison representatives of the Agricultural Adjustment Agency, WFA, informed at all times as to the availability of surplus trucks, by types and sizes.

2. The War Food Administrator will be informed (through reports from AAA) as to specific area needs for trucks to prevent impairment or threatened impairment of farm production and will certify such needs to the Surplus Property Board.

3. The board will direct the Office of Surplus Property to allocate a specified number of surplus trucks of the required types and sizes to the designated areas.

4. Sales of trucks under Regulation 3 will be advertised to dealers by the Office of Surplus Property in the usual manner. In addition, information may be obtained on these sales through AAA County Committees.

5. The Office of Surplus Property will sell the allocated trucks in accordance with the usual "spot sale" procedures, and any conditions under which the trucks will be sold will be specified in the advertising.

6. When so instructed by the State AAA Committee the County AAA Committees in the designated areas will issue certificates to farmers and farmers' cooperatives for the purchase of the allocated trucks from dealers.

In addition, the regional offices of the Office of Surplus Property have been instructed to take all possible steps to cause appropriate quantities of other types of surplus property to be sold or channeled into rural areas. Measures are provided whereby reasonable quantities of surplus property particularly adapted to farm use can be channeled directly into rural areas. The procedures call for close cooperation between the regional offices of the Office of Surplus Property and the liaison representatives of the Agricultural Adjustment Agency, WFA.

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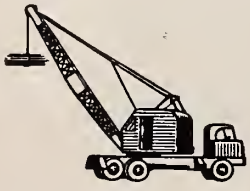

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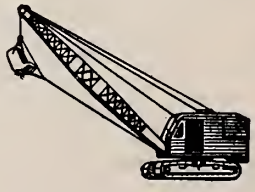

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against foreign Competition

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Release of New Variety Seed Cane C. P. 36-105

In accordance with established procedure, the three cooperating agencies which are working together in the development of improved sugarcane varieties for Louisiana, viz., the Division of Sugar Plant Investigations of the Bureau of Plant Industry, Soils, and Agricultural Engineering, United States Department of Agriculture, the Louisiana State Agricultural Experiment Station, and the American Sugar Cane League of the U. S. A., Inc., have jointly approved the release of C. P. 36-105 for commercial planting in the fall of 1945.

In cooperative field tests during recent years, C. P. 36-105 has compared favorably with Co. 281 and C. P. 34-120 in indicated yield of sugar per ton of cane but has averaged somewhat below C. P. 34-120 in yield of cane per acre. The new variety has given evidence of very satisfactory stubbling qualities including apparent resistance to stubble failure associated with prolonged standing of frozen cane. It is believed that this variety can be widely used to good advantage for mid-season to late milling, however, extensive utilization on muck areas of the southeastern parishes and in the Red River section generally cannot be recommended at this stage of the tests.

C. P. 36-105 is resistant to red rot and root rot. It has shown a trace of mosaic at 10 of the test fields and secondary increase stations, and 2 per cent infection at one. Control of mosaic in the variety is not expected to be a problem, although occasional roguing of seed cane areas may be necessary in some localities. It has shown low percentages of chlorotic streak.

Stalks of C. P. 36-105 approximate those of Co. 290 in diameter and are somewhat heavier than stalks of C. P. 34-120. Because of its relatively erect growth type and satisfactory resistance to lodging the variety should prove adaptable to mechanical harvesting.

In fiber content, and milling qualities, C. P. 36-105 is considered in a class with C. P. 29-320. Cane of C. P. 36-105 cut for the mill does not deteriorate at an excessively rapid rate but the variety is not considered suitable for windrowing purposes.

Approved and Signed:

E. W. Brandes, *Head Pathologist in Charge, Division Sugar Plant Investigations, U. S. Department of Agriculture*

W. G. Taggart, *Director of Experiment Stations, State of Louisiana*

J. J. Shaffer, Jr., *President American Sugar Cane League of the U. S. A., Inc.*

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12
MARCEL J. VOORHIES, Editor

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in which are consolidated

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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Meeting of the Contact Committee

Sugarcane Federal Experiment Station,
Houma, Louisiana
June 14, 1945

Chairman Stephen C. Munson of the Contact Committee of the American Sugar Cane League called the meeting to order at 9:30 A. M.

Approximately 200 sugarcane producers and processors from all sections of the sugar belt as well as representatives from the Houma Federal Experiment Station and the Louisiana State University Experiment Station and the Extension Division were present.

Following a thorough discussion of the unreleased variety of seed cane C. P. 36-105 it was decided to recommend its release this year. In Rapides and Avoyelles Parishes the recommendation is that it be used only on a limited basis on heavy soils.

The group also decided to recommend to the Contact Committee that arrangements be made with the Audubon Sugar Factory for milling as much as 20 tons of C. P. 36-105 for experimental purposes, using C. P. 34-120 and any other standard varieties as a control.

This will contemplate the installation of more suitable equipment such as the erection of a field derrick, the supplying of the necessary cane slings etc.

The group also recommended to the Contact Committee that Mr. Martin, Chief of the Department of Carbohydrates, Bureau of Industrial Chemistry and Engineering, Regional Laboratory, New Orleans, Louisiana, be contacted and apprised of the important problems in sugar manufacturing in Louisiana caused by the introduction of new varieties which may require changes in the current factory procedure for most efficient results. It is also recommended that the above mentioned Federal Bureau be requested to resume as soon as feasible, work on problems related to juice clarification and other factory processes.

The Sub-Committee received a request that as much as 30 tons of C. P. 36-105 be allocated for milling under usual large mill conditions with the provision that the information secured thereby be furnished in all of its details to the Contact Committee. The recommendation of the meeting was that the problem be left to the judgment of the Contact Committee.

It was recommended that:

(1) Seed cane C. P. 36-13 be increased to the limit of the seed supply.
(2) Seed cane C. P. 34-92 be increased to a maximum of five acres on secondary increase stations.
(3) Seed cane C. P. 36-19 be increased to a maximum of five acres in alluvial soils east of the Atchafalaya.
(4) Seed Cane C. P. 36-183 be increased to five acres on secondary increase stations.
(5) Varieties

C. P. 31-509	C. P. 34-53
C. P. 32-206	C. P. 34-115
C. P. 33-372	C. P. 34-139
C. P. 33-409	C. P. 36-55
C. P. 34-21	C. P. 36-191

be not further propagated since the Committee does not feel that they will develop into cane suitable

INSPECTION REPORT OF C. P. 36-105

Grower	Dates	Acres	Cultivation	Stand	No. of Chlorotic Streak	Number of Mosaic Disease	No. other Cane	Desirability of Location
Angola	5/15	.93	Very Good	V. Good	0	0	0	Good
Meeker	5/2	6.40	Very Good	Good	0	0	0	Good
Shirley	5/1	3.92	Very Good	V. Good	0	0	0	Good
A. A. Thibaut	5/2-6/1	.19	Backward	Fair	0	0	2	Good
Alma	5/2	1.60	Fair	Fair	0	0	0	Good
Smithfield	5/14	25.53	Very Good	Good	0	0	0	Good
Cinclare	5/1	3.12	Poor	V. Poor	0	0	0	Poor
		2.32	Good	Good	0	0	0	Good
A. Wilbert Sons	5/2	2.64	Good	Good	0	0	0	Good
Evan Hall	5/21-5/31	2.17	Fair	Fair	0	0	0	Fair
Palo Alto	5/21-5/31							
F. A. Graugnard Sons	4/26	7.29	Good	G. to F.	0	9	0	G. to F.
Ed. Dufresne	4/27-5/25	1.54	Backward	Fair	0	5	5	Good
San Francisco	5/21	.92	Good	Good	0	0	0	Good
Reserve	4/27	6.23	Good	Good	0	0	0	Good
C. J. Savoie	4/26	1.90	Very Good	V. Good	0	0	0	Good
Glenwood	5/5	6.92	Very Good	V. Good	0	0	0	Good
Little Texas	4/24	9.10	Good	Good	0	0	0	Good
Est. E. G. Robichaux	5/7	1.02	Fair	60%	0	0	Few	Good
Caldwell Sugars	4/24-5/16	10.02	Fair	Fair	0	0	0	Good
Greenwood	5/9	.50	Good	G. t o F.	0	61	0	Good
Laurel Valley	5/7	10.13	Fair	80%	28	18	119	Good
Raceland	4/23-5/28	2.44	Good	Fair	1	34	3	Good
Valentine	5/11	10.06	Good	80%	0	37	A Lot	Good
Clovelly		0						
McCollum Bros.								
Southdown	5/10	5.58	Fair	70%	0	2	36	Good
Maryland	4/17-5/22	4.20	Good	Good	0	0	Yes	Good
Sterling	4/17	.51	Good	Good	0	0	0	Good
Oaklawn		0						
Columbia		0						
Hugh Junca		0						
Albania	4/19-5/23	2.17	Good	Good	0	I	A Lot	Good
H. Olivier	5/23	.15	Good	Good	0	0	0	Good
Leon Landry	4/18	4.27	Good	Good	0	0	0	Good
Lionel Kling	4/18	3.81	Good	Good	0	0	0	Good
Levert-St. John	4/17	1.90	Good	Good	0	0	0	Good
Dr. J. L. Beyt	4/17	3.34	Fair	Fair	0	0	0	Good
Billeaud	4/18	2.60	Very Good	V. Good	0	0	0	Good
Youngsville	4/18-5/23	1.50						
Chas. Caldwell	4/19	1.66	Good	Good	0	0	6	Good
		148.58						

for commercial release. It is felt, however, that present plantings of the above varieties should be retained to guard against a possible change in the variety picture.

It is the recommendation (advisory and not mandatory) that additional increases be permissible within reasonable limits at grower's own responsibility and on his own properties.

Location and Acreage of Unreleased Varieties to Be Increased

The following report on location and acreage of unreleased varieties recommended for increase was submitted to the meeting.

A plan to decentralize the supply of seed cane C. P. 36-13 and assure a well distributed supply at all secondary increase stations was explained. This variety is tentatively ear-marked for release for Commercial Plantings in 1946.

A paper on the fertility work at the Federal Station was presented by Dr. Lester G. Davidson, Associate Chemist. The paper will be published in *The Sugar Bulletin.*

Dr. J. W. Ingram of the Houma Federal Station presented a paper on Borer Control work. The material will be available for publication in *The Sugar Bulletin.*

Dr. Ralph Mathes of the Houma Federal Station presented a paper on varietal resistance to border damage. The material will be available for publication in *The Sugar Bulletin.*

Dr. E. V. Abbott of the Houma Federal Station discussed the sugar cane disease situation and will have the material prepared for publication in *The Sugar Bulletin.*

Dr. E. M. Summers of the Houma Federal Station discussed the handling of new seedlings and the method of allocating C. P. numbers. In 1944 over 21,000 varieties were handled and over 8,000 mosaic inoculations were made.

Test Fields

Variety:	34-92	36-13	36-19	36-183	36-105
Meeker	----	----	----	----	6.40
Shirley	----	----	----	6.52	3.92
Alma	----	----	----	----	2.00
Cinclare	4.28	----	----	3.85	3.12 (Poor) 2.32(Good)
Reserve	----	----	1.17	1.20	6.23
Glenwood	----	----	6.83	2.90	6.92
Greenwood	6.16	.50	.40	1.00	.50
Raceland	2.28	----	----	1.02	2.44
Clovelly	1.00	----	----	----	----
Sterling	----	----	----	1.05	.51
Oaklawn	----	----	----	----	----
Columbia	----	----	----	----	----
Albania	----	----	----	.21	2.17
Levert-St. John	.92	----	----	.22	1.90
Billeaud's	----	----	----	2.05	2.60
Youngsville	----	----	----	.75	1.50
Chas. Caldwell	----	----	.74	.16	1.66
	14.64	.50	9.14	20.93	44.19

Secondary Stations

Angola	3.27	.27	.27	.27	.93
A. A. Thibaut	.23	.13	----	.13	.25
A. Wilbert's Sons	1.70	.21	.14	.33	2.64
Evan Hall	----	.18	.39	.40	2.70
Palo Alto	----	.22	.22	.34	----
F. A. Graugnard & Son	6.29	.20	.20	.20	7.29
Ed. Dufresne	1.54	.20	.20	.30	1.54
San Francisco	1.09	.25	.30	.31	.92
C. J. Savoie	1.40	.20	.20	.40	1.90
Little Texas	.64	.27	.28	.21	9.10
Est. E. G. Robichaux	.65	.21	.42	.36	1.02
Caldwell Sugars	7.22	.24	.24	.24	10.02
Laurel Valley	.48	.23	.23	.28	10.13
Valentine	3.30	.26	.14	.17	10.06
McCollam Bros.	----	.45	.27	.38	----
Maryland	.21	.05	.04	.09	4.20
Hugh Junca	.16	----	----	----	----
Howard Olivier	.22	.12	.15	.22	.15
Leon Landry	----	.45	.10	.81	4.27
Lionel Kling	1.55	.17	.22	.34	3.81
Dr. J. L. Beyt	4.90	.14	.10	.23	3.34
	34.85	4.45	4 11	6.01	74.27

Primary Stations

Smithfield	2.59	.68	----	1.19	25.53
Southdown	42.10	5.24	.89	1.50	5.58
	44.69	5.92	.89	2.69	31.11
Grand Total	94.18	10.87	14.14	29.63	149.57

Since 1942 the first part of the C. P. numbers which used to indicate the year the seedling was bred now denotes the year that the C. P. number is assigned.

Dr. R. T. Balch, of the Houma Federal Station discussed a paper on Aconotic Acid and this material will be published in *The Sugar Bulletin*.

Dr. R. M. Ramp in charge of Engineer Research at the Houma Federal Station briefly discussed the work planned.

Dr. George Arceneaux of the Houma Federal Station discussed weed control experiments and the testing of seed cane varieties. He presented a comprehensive chart giving experimental results of work on a large number of released and unreleased varieties.

In the afternoon a field tour of the Federal Station and some observation of drainage machinery was participated in by the growers nad processors attending the meeting.

A Burning Question—What Cane Varieties Will I Plant*

Cane farmers of Assumption Parish are growing as many as ten different varieties of sugar cane. In many cases you find all ten varieties grown on the same farm. Some of these cane varieties are excellent, some are fair, but many are so poor that they should be abandoned.

Due to varying conditions that exists on our farms, such as different types of soil, size of farms, and farm labor available, it is impossible to make specific recommendations to all farmers in the parish on what varieties to plant. Therefore, I shall discuss our cane varieties and hope that this discussion will help you to select the proper and best cane varieties for your farm.

Co. 290 and Co. 281 varieties are so heavily infected with mosaic disease everywhere in the parish that yields from these two varieties are generally very low. We have other varieties that replace these two with greater profit.

C.P. 28-19, our high sucrose cane with which we generally start grinding, is low in yield, lodges very badly, and is difficult to have cut by hand and machine. Other varieties can be used as our start-off cane.

C.P. 28-11, our black-land cane, is low in yield, lodges; and is difficult to harvest. I would recommend it, however, for farms that have plenty black-land and for farmers who need to harvest cane in black-land at the beginning of grinding before bad weather sets in. C.P. 28-11 stubble can be harvested at the beginning of the season.

C.P. 29-116 is a heavy yielder, but lodges badly, matures very late and cannot stand much cold weather. It is a risky cane.

C.P. 29-320, our old stand-by in fertile, well-drained, sandy land, isn't as good as it used to be, but its stubble can be harvested at the beginning of grinding. Its straight growth makes it very easy to harvest by hand and machine. This variety still holds an important place in our planting.

C.P. 33-243 looks good, but is risky. Don't plant to much of it.

C.P. 34-120, our latest variety, is showing up excellently. It yields heavily, suckers plentifully, and matures fairly early. It has shown up very well in sandy, mixed and black lands. The only question in regard to C.P. 34-120, is its lodging. Nevertheless, it is one of our very best varieties for Assumption Parish.

C.P. 29-120 is another of our best varieties. It grows straight and is easy to harvest by hand and machine, is a heavy yielder, has good sucrose, and can be windrowed. It does better in sandy land, but does well in mixed land. It is a good insurance cane and should occupy a large percentage of our planting.

C.P. 29-103 is another good variety but probably not as dependable as C.P. 29-120. It grows straight, is easily harvested by hand and machine, is good in yield and can stand more cold standing than any other variety. It is very susceptible to cane borers, however, and in some instances, have failed to stubble out very well.

Summary: Most cane farmers are planting C.P. 29-320 (in sandy land) and a little C.P. 28-11 (in black land) as start-off varieties. A fair percentage of their crops is being planted in C.P. 34-120 for November harvest, and a large percentage of their crop is being planted in C.P. 29-120 for late harvest and for windrowing if necessary to replace Co. 281. A fair percentage of C.P. 29-103 is being planted. Therefore, our outstanding varieties are: C.P. 29-120, C.P. 34-120, C.P. 29-320, C.P. 29-103 and C.P. 28-11. All other varieties are being abandoned.

WHAT VARIETIES WILL YOU PLANT???

Note: A new cane variety, C.P. 36-105, will be released this fall. 18.9 acres of it is now planted in Assumption Parish. Cane farmers will be able to buy some of this seed. Make your application to the American Sugar Cane League, 414 Whitney Bldg.,

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New Orleans 12, La. Two or three tons of this seed will probably be given to me for free distribution to cane farmers. Each farmer will receive about 8-12 stalks free. If you want a few stalks, apply to me by letter or card. I will let you know when and where to get these free stalks when I get it.

Very truly yours,

(Signed) M. Valois, *County Agent Assumption Parish.*

*Editor's Note:

We are reproducing the circular letter of County Agent Valois to the farmers of his parish because we feel that a sound appreciation of seed cane varieties by parishes is most timely and very important to the Louisiana sugar industry.

Puerto Rican Wage Rates

(*Official Release*)

Determination of Fair and Reasonable Wage Rates for Person Employed in Production, Cultivation, or Harvesting of Sugarcane in Puerto Rico, During Calendar Year 1945

Pursuant to the provision of subsection (b) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, and Executive Order No. 9392, issued October 28, 1943, the following determination is hereby issued:

Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in Puerto Rico during the calendar year 1945. —The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the production, cultivation, or harvesting of sugarcane in Puerto Rico during the calendar year 1945, if all persons employed on the farm during that period in the production, cultivation, or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates not less than the following:

(a) *Day rates.*—The day rate for the first 8 hours of work performed in any 24-hour period (except for ditch diggers, ditch cleaners, or field flooders in class E, when the applicable day rate shall be for the first 7 hours of work performed in any 24-hour period) shall be as follows:

(b) *Hourly rates.*—Persons working less than 8 hours (or 7 hours under class E) in any 24-hour period shall be paid the hourly equivalent of the day rates provided in paragraph (a).

	Farms other than interior farms	Interior farms[1]
Class of Work		
A. All kinds of work not classified below	$1.50	$1.40
B. Tractor operators	2.35	2.20
Non-Harvest Operations		
C Cartmen in cultivation work	1.60	1.50
D. Plow steermen and operators of irrigation pumps	1.80	1.65
E. Ditch diggers, ditch cleaners, field flooders (per 7-hour day)[2]	1.80	1.65
Harvest Operations		
F. Cartmen in harvest work	2.00	1.80
G. Sugarcane cutters (for grinding or planting), seed cutters, crane operators, dumpers	1.80	1.65
H. Portable track handlers, railroad or portable track car loaders	2.00	2.00
I. Crane cart or truck loaders	1.90	1.80

[1] Interior farms shall be deemed to be those farms the sugarcane from which is marketed (or processed) at mills located in the mountain sections and whose 1938 production did not exceed 3,000 short tons of sugar, raw value.

[2] Field flooders shall be deemed to be workers who set up or remove banks in drainage ditches when used for flooding cane fields.

(c) *Overtime.*—Persons employed for more than 8 hours (or 7 hours under class E) in any 24-hour period shall be paid for the overtime at a rate double the hourly equivalent of the day rates provided in paragraph (a).

(d) *Piece rates.*—If work is performed on a piece rate basis the earnings per day or per hour shall be not less than those specified under paragraph (a), (b), or (c) above, whichever is applicable.

(e) *Wage increases.*—For each fortnight of the period covered by this determination the wage rates shall be increased in accordance with the applicable scale set forth below, whenever the average price of raw sugar, duty paid basis, determined in accordance with the prevailing method used between processors and growers for the computation of the price of sugarcane, is more than $3.865 per 100 pounds, for any such fortnight.

Fortnightly average price of sugar		Increase per day over rates prescribed under paragraph (a)
More than—	But not more than—	
		Cents per day
$3.865	$4.115	10
$4.115	$4.365	21
$4.365	$4.615	32
$4.615	$4.865	43

The above increases shall also be applied to the daily earnings of workers employed on a piece rate basis. Increases for part of a day's work on a time or piece rate basis shall be paid in proportion.

(f) *General provisions.*—(1) If the producer and laborer agree upon a wage rate for any class of work higher than that prescribed herein, payment in full of the agreed upon rate must be made to qualify the producer for payment.

(2) The producer shall furnish to the laborer, without charge, the perquisites customarily furnished by him, such as a dwelling, garden plot, pasture lot, and medical services.

(3) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates ot laborers below those determined above.

Issued this 20th day of January 1945.

Ashley Sellers,
Assistant War Food Administrator.

Aconitic Acid

Although aconitic acid (COOH) CH=C (COOH) CH_2 (COOH) propene— 1,2,3 tricarboxlyic acid has been reported as being present in sugar cane juice since 1877, it was not until about 1940 that this material was considered a suitable source for industrial development and utilization. Aconitic acid has usually been prepared by the cautious dehydration of citric acid. McCalip and Seibert (1,3), working at the Audubon Sugar Factory, and Ventre and his associates (2,4-7) have initiated and pursued these investigations which recently culminated in the production of a few tons of crude calcium aconitate at the pilot plant unit of the Iberia Sugar Cooperative, Inc., at New Iberia, La.

The average aconitic acid content of sugar cane is about 25 to 40 per cent of the amount in sorgo which contains 3-5 lb. of equivalent recovarebl calcium aconitate per ton of sorgo. Because of the small quantity available in the juice, extraction of aconitic acid was made from sugar cane molasses. The calcium salt of the

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acid was prepared at the New Iberia plant by treatment of diluted B molasses with lime and calcium chloride and heat (75°-100°C). The results obtained indicate that approximately 2 lb. of the salt can be extracted from a ton of Louisiana sugar cane. Based upon pre-war prices of 35-40 cents per lb. for aconitic acid, this yield indicated an additional income to sugar producers of 30-40 cents per ton of cane. Since removal of calcium aconitate helps improve the molasses and the boiling house efficiency by removing non-sugar solids and since aconitic acid has numerous possible uses in the fields of plastics, resins, synthetic rubber and food products, further developments in its manufacture from sugar cane or sorgo will merit the attention of the sugar industry.

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NOTICE!

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A number of plots of this cane are subject to this distribution. It has been grown with the understanding that those growing it shall be paid for it at the price of mill cane plus $1.50 per ton for cutting it and loading it on the vehicle of the purchaser and the League is authorized by the U. S. Department of Agriculture and the Louisiana Experiment Station to charge a distribution fee of 85 cents a ton.*

If you wish some of this cane please fill out and sign the application blank on the reverse hereon. NO OTHER FORM OF APPLICATION WILL BE ACCEPTED, AND IT MUST BE RECEIVED AT THE OFFICE OF THE AMERICAN SUGAR CANE LEAGUE, 414 WHITNEY BUILDING, NEW ORLEANS 12, NOT LATER THAN SEPTEMBER 8th, 1945.

In the absence at this time, of exact figures supplied by the Government on the amount of the benefit payment for 1945 the precise price of mill cane is not known. You are therefore required to agree to pay the best approximation we can now make, $9.42 per ton or actual mill price plus benefit payments.

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(You will find application blank on the back of this page. USE IT.)

Remember—

The last day on which applications will be received is September 8th, 1945.

*This is to cover the cost of distribution, which involves clerical, stenographic, and administrative work, printing, postage and a very heavy responsibility. It is likewise a partial reimbursement to the League for various extraordinary expenses incurred in bringing about the acquisition of new canes and the preliminary experimentation therewith before release. The League has been designated by the U. S. Department of Agriculture and the Louisiana Experiment Station to make the distribution simply because they believe it will carry out the task more efficiently, and certainly more cheaply, than any other agency.

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.....1945

I hereby apply for:

.....tons of C. P. 36-105 seed cane.

I understand the cane will cost me a total of approximately $9.42 (Nine Dollars and Forty-Two Cents) a ton.

Mill price per ton at $3.75 sugar.....	$3.86
Conditional payment at 80¢ a cwt.....	1.28
Value of molasses at 18¢.....	.33
Incentive payment.....	1.60
Cost of cutting and loading.....	1.50
(This sum all goes to the grower of the cane)..	$8.57
Distribution charge (Goes to the American Sugar Cane League).....	.85
Total:.....	$9.42

I enclose $.....which is a deposit of earnest money at the rate of $1.00 per ton, non-refundable (unless the cane is not tendered me). The remainder I will pay when the cane is ready to be delivered to me, and I am to be notified concerning this and supplied with the name and address of the grower from whom I am to procure the cane, which I will send for not later than November 2d, 1945. Should the cane fail to be tendered to me by that date all payments and deposits made by me are to be refunded in full on each ton not tendered.

I had.....acres of Sugarcane in 1944-45.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against Foreign Competition

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The Philippines

By C. J. Bourg

The liberation of the Philippine Islands is finally being completed. It is natural that every American should favor the rehabilitation of these Islands with generous help from the United States. In the face of the inclination towards sentimental thinking by writers, partly inspired, it is refreshing to consider the frank statements published by proven friends of the Filipinos such as Senator Tydings and former U. S. Commissioner Sayre. These two gentlemen know the Islands and their people intimately and have made practically a lifelong study of their problems and needs.

In connection with planning in Congress for the future of the Philippine Islands, both as to political and economic consideration, there is reproduced below excerpts from public statements which command attention.

Excerpts from Senator Tydings' (Chairman of the Committee on Insular Affairs, and member of the Filipino-American Commission) Message to Congress concerning the Philippine Islands, appearing in the Congressional Record of June 7, 1945

" . . . It will take at least 2 years, probably 3, to even revive the sugar industry. As we all know, sugar was before the war the principal Philippine export crop. It brought millions of dollars annually to the people of the Islands. There is no sugar crop at present in the Philippines.

" . . . Many sugar mills and other industrial plants of the Philippines were wholly or partly destroyed. Some escaped serious damage. Much machinery was shipped to Japan. Much scrap iron from destroyed machinery was carried off by the Japanese.

" . . . No major steps have been taken to rehabilitate sugar because no crop can be harvested for export probably before 1948.

". . . In the field of future trade relations between the Philippines and the United States, we run into many schools of thought. Some advocate perpetual free trade between the Islands and this country; others advocate free trade for a limited number of years; others would put the Philippines, immediately after independence, on the same basis as that of any other nation in its trade relationship with the United States. This is a matter which Congress will have to consider.

". . . Therefore, I respectfully suggest, as a basis of consideration, that we adopt a trade relationship with the Philippine Nation which will be definite enough to inform all concerned of what our policy is going to be now and in the future, and thus clear the air of uncertainty so far as we can. It seems to me that the proper course, taking into account all the present circumstances, would be to continue the United States-Philippine trade status which was in existence at the outbreak of the war for, say, another 3, 4 or possibly 5 years. Under that arrangement the United States tariffs on Philippine products would be low in relation to those that would apply to imports from other countries. This tariff plateau would provide an opportunity for the Islands to get on their feet again. We should then gradually proceed upward from that tariff level, over a period of years, until the Philippines are in the same status as that which is the lot of other free and independent nations. We can never make the Filipinos free and independent if their economy is to be linked to ours indefinitely. They can only be free and independent by actually

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being free and independent. That means that eventually, like France or Britain, Peru or Bolivia, China or Australia, they must stand on their own feet.

". . . So, in summing up, I respectfully recommend to your considering, (1) that our independence policy stand and that we fulfill to the letter our promise; (2) that we make such loans to the Philippine Government as may be wise and necessary to carry that Government through the period of real emergency; (3) that we make a generous gift, say of a hundred million dollars, to be expended by our own people under proper restrictions and conditions for reconstruction and rehabilitation in the Islands; and that (4) we promulgate a trade policy which will give this nation a chance to live and recover but which will eventually confer upon her economic as well as political freedom. . . ."

Excerpts from an article in the March 1945 issue of the Atlantic Monthly by Francis B. Sayre, former U. S. Commissioner in the Philippines, and former Assistant Secretary of State.

" . . . Permanent free entry for Philippine products in the American market offers no solution. If the Filipino people are ever to have the independence which they crave, clearly their fundamental economy and means of livelihod must be free from dependence upon changeable legislative majorities in the United States Congress. Political independence without economic independence would be a mockery. Furthermore, if stable foundations are to be built for a lasting world peace, the post-war trade arrangements must be built upon equality of commercial treatment to all and not upon special trade preferences and discriminations. If the United States grants and receives exclusive preferential treatment in areas with which it has close political ties, it would be difficult for us successfully to oppose imperial and Dominion preferences in the British Empire and elsewhere.

". . . When liberation comes, presumably sugar cultivation in the Philippines will be on a home-consumption basis. If the new Philippine government, after the war, is wise enough and strong enough to prevent a return to pre-war sugar production figures one of the great milestones on the way to economic independence will be passed.

" . . . If and when independence shuts the Filipinos out of the protected American markets, they will be forced to sell in world markets in competition with other areas with lower standards of living and production costs. They will have to turn away from the production of surpluses like sugar, which are saleable only in the protected American market, and learn to produce goods which they can sell at profit in world markets. To achieve this, Filipinos must improve and lower the cost of their products through increased skill and scientific knowledge, through labor-saving devices, through utilization of by-products, through inventive ingenuity along a thousand different lines.

" . . . Because the present economic dependence of the Filipinos upon the United States is largely of our own making, and because it is to our own interest to build for future stability in the Pacific, the Filipino people must be given their independence under such conditions as will assure them sound economic foundations for their future. The American people will not be content with anything less. . . ."

Sugar Consumption

(By C. J. Bourg)

The Bureau of Agricultural Economics, USDA, has issued a release entitled "The National Food Situation". Among the subjects covered is "Changes in the Civilian Consumption of Sugar Since 1939". In the midst of the sugar shortage, for which there appears to be no substantial relief in sight for 15 months, we commend that our readers make a study of this official explanation.

Changes in the Civilian Consumption of Sugar Since 1939

The civilian consumption of cane and beet sugar averaged 98 pounds per capita, refined basis, in 1939. The rate of consumption dropped slightly in 1940 to 95 pounds, then increased sharply to 104 pounds per capita in 1941. Sugar rationing began in May 1942. In 1942, receipts from foreign source declined by 2 million tons. Civilian consumption averaged 86 pounds per capita in 1942 and 80 pounds in 1943. In 1944 consumption by United States civilians was up 10 percent over the previous year, to 89 pounds per capita, despite heavy military takings. This was the result of smaller WFA shipments to other countries, a 15 percent increase in receipts from foreign sources and about a 24 percent reduction in stocks.

In 1945, estimated civilian sugar supplies will average about 72 pounds per capita. Stocks are at a minimum working level; total Cuban supplies are smaller than last year; military takings for troop use show an increase; War Food and military shipments to liberated areas will be much larger than last year.

The industrial use of sugar reported in the 1939 Census of Manufactures accounted for about 1/3 of the civilian sugar supply in 1939. (Table 1.) However, the 1939 census reports of industrial users were somewhat incomplete because firms with less than $5000 gross sales were excluded. Total civilian sugar consumption reached a new record in 1941 and the industrial use of sugar was much larger than in 1939. The best available data for estimating the amount of sugar used by food industries in 1941 are the reports of sugar used submitted to the Office of Price Administration as the basis for sugar rationing. These may have been inflated somewhat by including purchase for stocks. The estimates of 1941 use are given in Table 1. Much of the increased industrial use probably was due to the fact that consumer purchasing power was much higher in 1941 than in 1939, and people bought more candy, ice cream, baked goods, soft drinks, etc. Also, population shifts from rural to urban areas and the increase in the number of women employed in industry contributed to greater demand for manufactured products.

According to preliminary estimates of the Office of Price Administration—based on allotments issued, industrial use of sugar for products for civilian consumption was about as large in 1944 as in 1941.[1] The consumption of sugar in manufactured products in 1944 apparently accounted for about half of total civilian sugar consumption. Allocations for the first 3 quarters of 1945 indicate that sugar distribution between industrial users and institutions and households remains substantially the same as in 1944. With a total civilian supply of 5 million tons the total direct use of sugar by households, restaurants, hotels and other institutions would be 45 percent less than their 1939 use, whereas total industrial use in such manufactured products as candy, baked goods, canned goods, and dairy products would be 7 per cent greater than the total reported in 1939.

In 1944, the household ration of sugar per capita amounted to half a pound per week. In addition, the purchase of 25 pounds of sugar per person for home canning was permitted. Home canning has increased materially during the war. Because of a 650,000 ton drop in direct supplies for homes and institutions in 1945 compared with 1944, the household ration was reduced on February 1, 1945 to .393 pounds per capita per week and on May 1, to .285 pounds per week. The maximum ration for home canning, including home canning of fruits, has been announced at 15 pounds per capita, but not more than 120 pounds per family. This ration will be issued by local boards, and only 5 pounds per capita may be issued for canning vegetables or making jams, jellies, relishes, catsup, etc., but not including home-canned fruits.

Apparently, no data are available to indicate the total amount of sugar used in institutions such as restaurants, hotels, sanitariums. However, the number of meals served in public eating places has increased greatly. Institutional use of sugar has been directed by means of allotments based on the amount of baking done, number of meals served, and amount of sugar used in the base period. From May 1 to December 31, 1944, each institution's allotment was either .03, .04, or .05 pounds per person per meal depending on the amount of baking done, or 100 to 120 percent of the quantity used in the base period, December 1942 (a period of rationed usage), again depending on the amount of baking done, *whichever was smaller*. These allowances were reduced on January 1, 1945 to 85 percent of the May-December 1944 rates for institutions doing no baking and to 90 percent of others. On May 1, 1945, they were cut to 70 percent and 75 percent of the May-December 1944 rates. Beginning July 1, 1945 the allotments will be on the basis of the rates per person per meal of .015, .022, .03 pounds, or 100 to 120 percent of ration base period use (60 to 72 percent of preration use), whichever is smaller.

Quotas for the use of sugar by most food industries have been based on the quantities used in 1941. The industrial use of sugar in 1941 was 28 percent greater than in 1939, according to estimates based on reports submitted to the Office of Price Administration for 1941 and the 1939 Census of Manufactures. Production of manufactured foods containing sugar increased materially from 1939 to 1941, and because of increasing consumer demand and rising prices in 1941, substantial quantities of sugar were set aside for future use in view of the uncertainties of the war period. However, the reports to the OPA covered use only, not increases in stocks. In 1944, quotas for purchase of sugar for most industrial uses were set at 80 percent of the quantity used in 1941, with additional allotments for provisional users. Pharmaceutical manufacturers were permitted 125 percent of their usage in the base period. Supplementary quotas were issued for manufacturers in areas with greatly increased population because of war work.

In the first quarter of 1945 the quota was cut from 80 percent to 70 percent of base usage, for industries except those making bread, bakery and other cereal products. A further reduction was made for the second quarter, to 65 percent with the exceptions of the bread, bakery, cereal product industries (75 per cent), ice cream and other dairy products (70 percent), and pharmaceuticals (120 percent). Allotments for the third quarter were again reduced, to 50 percent of the base use, except that manufacturers of breads, bakery products and cereals are to receive 60 percent of their base, and pharmaceuticals 110 percent.

Certain types of industrial users have been allotted sugar according to the quantities of their products. Among these "provisional uses" were canned fruits and vegetables, meat packing, bulk sweetened condensed milk, and jams, jellies and preserves. The use of sugar in jams, jellies, preserves has been taken off the provisional basis for 1945.

TABLE 1.—Estimated civilian sugar consumption by households, institutions, and major industry groups, 1939, 1941, 1944 and indications for 1945

(Cane and beet—raw basis)

	1939	1941	1944	Indicated 1945	
				Quantity	As percent of 1939
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	Percent
Total civilian sugar consumption	6,908	7,350	6,157	5,000	73
Households and institutions	[1]4,571	[1]4,350	[1]3,157	[1]2,500	55
Industrial uses—total	[2]2,337	[3]3,000	[4]3,000	[5]2,500	107
Bread, baked goods and other cereal products	630	750	700	650	103
Bottled beverages, extracts, sirup	535	800	750	600	112
Candy, chocolate, etc.	550	625	600	450	82
Ice cream, ices, other dairy products[6]	175	250	300	250	143
Canned, frozen, and other bottled foods[7]	247	350	450	350	142
Other[8]	200	225	200	200	100
Percentage of total civilian consumption—					
Households and institutions	66	59	51	50	
Industrial uses	34	41	49	50	
Civilian consumption of sugar, per capita, refined basis—pounds	98.0	103.6	89.0	72	73

[1] Residual after subtracting estimated industrial usage from total civilian consumption.
[2] Census of Manufacturers, 1939. Excludes use by firms with less than $5,000 gross sales.
[3] Estimates of total quantities and use by various industries based on reports by industrial users to the Office of Price Administration. The total base for industrial users' quotas is somewhat higher than actual total use in 1941 because of adjustments for hardship cases.
[4] Estimates based on allotments made by the OPA.
[5] Estimated from quotas for first 3 quarters of 1945 announced by the OPA.
[6] Including bulk sweetened condensed milk and some egg mixes.
[7] Including canned fruits, jams, jellies, preserves, fruit butters.
[8] Including meat packing, salad dressings, pharmaceuticals, and small quantities of non-food users.

If the distribution of the available civilian supplies during the last quarter of 1945 should follow the pattern of the third quarter for civilian distribution, the industries manufacturing bread, baked goods, and other cereal products would use in 1945 substantially the same total quantity of sugar that they reported as used in 1939; the beverage industries would use 12 percent more than 1939 usage; the candy, chocolate and cocoa group—18 percent less; manufacturers of ice cream, ices, and other dairy products; and the industries canning, bottling, drying, and freezing fruits and making jams, preserves, etc. would use over 40 percent more than their total for 1939 as reported in the Census of Manufactures.

[1] In addition, the various industries used large quantities of sugar for products sold to the U. S. military and war services.

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Effect of Different Sources and Rates of Application of Nitrogen on Yields of Sugar and Sugarcane in Louisiana

By Lester G. Davidson,[1] Associate Chemist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

Published reports [1, 2, 3, 4, 5, 6, 7, 8] on the effect of fertilizer on sugarcane in Louisiana have shown that fertilization with nitrogen is of prime importance in the production of maximum yields of cane and sugar. Gouaux, Sturgis, and Walker [4] reported response to nitrogen and additional response to nitrogen plus phosphate or potash or both in tests conducted in the western section of the sugarcane area. However, most of the cane in Louisiana is fertilized with nitrogen only, and for this reason a comparison of the effects of the different nitrogen fertilizers and of the rate of application of nitrogen should be of value in the selection of the kind of nitrogen fertilizer to be used as well as its rate of application. The work of the Soil Fertility Section of the Houma Station includes studies of the effects of source and of rate of application of nitrogen on yield of cane and sugar and on analysis of crusher juice. The data presented in this article represent averaged results of replicated fertilizer tests conducted over a period of 6 to 10 years. The yields of sugar shown in the tables were calculated by means of the Winter-Carp formula.

The comparative effects of nitrate of soda, ammonium sulfate, and cyanamid applied at the rate of 60 pounds of nitrogen per acre, on sucrose and purity of crusher juice and on yields of sugar per acre from cane grown on major soil types are shown in Table 1. Crusher juice analyses and sugar yields from the unfertilized cane, and differences required for significance, are also shown in this table.

On Yazoo, Franklin, Iberia, and Lintonia soils, for both plant and stubble cane, the sucrose and purity of the crusher juice of cane fertilized with these 3 sources of nitrogen did not differ significantly. On Sharkey soil the use of ammonium sulfate apparently slightly depressed the sucrose and purity of the crusher juice as compared to the other 2 sources of nitrogen, but these differences were not appreciable. The yields of sugar per acre, on all 5 soil types, for both plant and stubble cane, did not differ significantly with the source of nitrogen used.

The comparative effects of nitrate of soda and Uramon, applied at the rate of 60 pounds of nitrogen per acre, on sucrose and purity of crusher juice and on yield of sugar per acre from cane grown on some of the major soil types are shown in Table 2. None of the differences shown in this table are significant,

indicating that nitrate of soda and Uramon are of approximately equal value as cane fertilizers when applied at the same rates of nitrogen per acre.

Table 1—Comparative effects of Nitrate of Soda, Ammonium Suflate, and Cyanamid when applied at the rate of 60 pounds of Nitrogen per acre on crusher juice analyses and yield of sugar per acre.

Nitrogen Source	Plant cane			Stubble cane		
	Sucrose	Purity	Sugar per acre	Sucrose	Purity	Sugar per acre
	Percent	Percent	Pounds	Percent	Percent	Pounds
	(9 tests)		Yazoo Soil		(2 tests)	
Nitrate of soda	14.52	84.12	5728	15.36	86.84	5400
Ammonium sulfate	14.66	83.87	6052	15.24	85.21	5362
Cyanamid	14.70	84.28	5978	15.40	87.03	5160
Control (no fert.)	15.16	85.69	5435	15.30	86.47	3543
Sig. dif. (P.=.05)	0.31	0.90	456	0.69	2.16	803
	(8 tests)		Sharkey Soil		(5 tests)	
Nitrate of soda	12.80	78.88	6056	13.60	82.08	5397
Ammonium sulfate	12.56	77.26	6236	13.09	79.83	5495
Cyanamid	12.90	78.51	6344	13.33	80.96	5432
Control (no fert.)	13.17	80.21	5119	14.05	83.29	3552
Sig. dif. (P.=.05)	0.33	0.95	488	0.44	1.37	508
	(7 tests)		Franklin Soil		(7 tests)	
Nitrate of soda	13.28	80.64	5864	13.28	80.95	4364
Ammonium sulfate	13.44	80.72	6053	13.33	80.72	4436
Cyanamid	13.42	80.70	5868	13.26	81.06	4453
Control (no fert.)	13.69	81.98	5375	13.49	82.08	3054
Sig. dif. (P.=.05)	0.35	1.02	522	0.37	1.16	429
	(2 tests)		Iberia Soil		(2 tests)	
Nitrate of soda	15.99	86.54	7270	16.83	88.08	4360
Ammonium sulfate	15.95	86.13	7466	16.36	86.94	5145
Cyanamid	16.02	86.10	7678	16.58	87.44	4992
Control (no fert.)	16.17	86.87	6330	16.86	88.74	3681
Sig. dif. (P.=.05)	0.66	1.90	976	0.69	2.16	803
	(1 test)		Lintonia Soil		(3 tests)	
Nitrate of soda	12.57	79.21	3947	13.69	80.66	6624
Ammonium sulfate	12.11	77.38	3804	14.02	81.12	6905
Cyanamid	12.59	79.33	3609	13.77	81.25	6695
Control (no fert.)	13.07	80.93	3419	15.02	85.01	4674
Sig. dif. (P.=.05)	0.94	2.69	1381	0.57	1.77	655
	(27 tests)		Average for all Soils		(19 tests)	
Nitrate of soda	13.73	81.66	5909	14.02	82.57	5101
Ammonium sulfate	13.72	81.02	6128	13.90	81.68	5277
Cyanamid	13.85	81.59	6096	13.93	82.36	5196
Control (no fert.)	14.19	83.02	5318	14.42	84.02	3558
Sig. dif. (P.=.05)	0.18	0.52	266	0.22	0.70	261

Table 2—Comparative effects of Nitrate of Soda and Uramon when applied at the rate of 60 pounds of Nitrogen per acre on crusher juice analyses and yield of sugar per acre.

Nitrogen Source	Plant cane			Stubble cane		
	Sucrose	Purity	Sugar per acre	Sucrose	Purity	Sugar per acre
	Percent	Percent	Pounds	Percent	Percent	Pounds
	(8 tests)		Yazoo Soil		(1 test)	
Nitrate of soda	13.88	82.34	5484	14.69	86.41	4142
Uramon	13.92	82.32	5539	14.40	85.77	4262
Control (no fert.)	14.52	83.97	5098	14.62	86.15	2635
Sig. dif.(P.=.05)	0.35	0.94	423	0.99	2.65	1195
	(4 tests)		Sharkey Soil		(2 tests)	
Nitrate of soda	13.15	80.15	4763	13.28	81.34	2428
Uramon	13.50	80.04	4874	13.54	81.48	2330
Control (no fert.)	13.62	81.33	3923	13.50	81.96	1740
Sig. dif.(P.=.05)	0.50	1.33	597	0.70	1.87	845
	(4 tests)		Franklin Soil		(4 tests)	
Nitrate of soda	13.34	80.79	5616	13.10	81.13	4036
Uramon	13.30	80.44	5874	13.38	81.79	4367
Control (no fert.)	13.80	82.44	5158	13.22	82.11	2776
Sig. dif.(P.=.05)	0.50	1.33	597	0.50	1.33	597
			Lintonia Soil		(1 test)	
Nitrate of soda				14.57	82.74	5731
Uramon				14.48	82.55	5700
Control (no fert.)				15.74	86.72	3368
Sig. dif. (P.=.05)				0.99	2.65	1195
	(16 tests)		Average for all Soils		(8 tests)	
Nitrate of soda	13.57	81.41	5336	13.53	82.04	3859
Uramon	13.65	81.22	5456	13.68	82.30	4012
Control (no fert.)	14.12	82.92	4819	13.78	83.15	2573
Sig. dif. (P.=.05)	0.25	0.66	299	0.35	0.94	423

Ammononium nitrate, calcium nitrate, Calurea, and A-N-L Brand nitrogen (ammonium nitrate—dolomite, pelleted) have been compared with nitrate of soda in a limited number of tests. Average results of these tests indicated that cane fertilized with these sources of nitrogen at the same rates of application of nitrogen per acre produced approximately equal yields of sugar per acre, and that the sucrose and purity of the crusher juice were not materially different.

Rates of Nitrogen Fertilization—Plant Cane

The effects of different rates of nitrogen fertilization on juice quality and on yields of plant cane and of sugar on 3 of the major soil types are shown in Table 3. Rates of nitrogen used in these comparisons were 0, 36, 60, 96 pounds per acre. Nitrate of soda was used in all of these tests.

On Yazoo soil a significant increase in yield of cane and an almost significant increase in yield of sugar per acre resulted from the use of 36 pounds of nitrogen per acre as compared to the unfertilized controls. The use of over 36 pounds of nitrogen per acre resulted in insignificant increase in yields of cane and insignificant decrease in yields of sugar per acre, due to the slight depressing effect of the higher nitrogen applications on sucrose and purity of the crusher juice. A decrease in sucrose and purity resulted from the use of 36 pounds of nitrogen, but this was accompanied by a sufficient increase in yield of cane so that the yields of sugar per acre was almost significantly increased by this treatment.

On Sharkey soil the yield of cane and of sugar per acre were increased significantly by the use of 36 pounds of nitrogen per acre as compared to the unfertilized controls, and a further significant increase in yield of cane and sugar were obtained by the use of 60 pounds of nitrogen per acre. The sucrose and purity of crusher juice were not affected by the use of 0, 36, and 60 pounds of nitrogen per acre. Although a small increase in yield of cane over that obtained with the use of 60 pounds of nitrogen per acre resulted from the use of 96 pounds of nitrogen, the yields of sugar per acre from these two treatments were the same. No doubt the depressing effect of the high rate of nitrogen fertilization on sucrose and purity of crusher juice compensated the increased yield of cane.

On Franklin soil the yields of cane and of sugar per acre were significantly increased by the use of 36 pounds of nitrogen per acre as compared to the unfertilized controls. Yields of sugar per acre from the use of 60 and 96 pounds of nitrogen per acre were practically identical and only slightly higher than were oftained with 36 pounds of nitrogen. Sucrose and purity of crusher juice were practically unaffected by the use of 0 and 36 pounds of nitrogen per acre but were slightly depressed by the use of 60 and 96 pounds of nitrogen. The yield of cane was slightly but not significantly increased by the use of 60 or 96 pounds of nitrogen as compared to 36 pounds of nitrogen.

On Lintonia soil only 2 tests including these rates of nitrogen have been conducted. The average results of these tests show small but not significant increases in yield of cane and of sugar per acre for 36, 60, or 96 pounds of nitrogen as compared to the unfertilized controls.

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Table 3—Effects of varying rates of Nitrogen fertilization on yields of sugar and cane and on sucrose and purity of crusher from plant cane grown on 3 of the major soil types.

Pounds Nitrogen per acre	Soil type and number of tests	Sucrose %	Purity %	Pounds sugar per acre	Tons cane per acre
0	Yazoo	13.64	81.20	5530	29.91
36		13.34	80.30	5715	31.90
60	27	13.19	80.15	5702	32.09
96		13.00	79.67	5613	32.19
Diff. for sig. (P.=.05)		0.16	0.47	186	0.95
0	Sharkey	13.99	82.09	3839	19.80
36		14.03	82.02	4468	23.06
60	21	14.01	82.09	4712	24.29
96		13.82	81.49	4709	24.81
Diff. for sig. (P.=.05)		0.18	0.53	212	1.08
0	Franklin	14.49	83.45	3771	18.42
36		14.54	83.44	4133	20.40
60	15	14.38	83.24	4270	21.32
96		14.24	82.76	4265	21.66
Diff. for sig. (P.=.05)		0.21	0.63	251	1.28

Rates of Nitrogen Fertilization—Stubble Cane

The effects of different rates of application of nitrogen fertilizer on juice quality and on yields of stubble cane and sugar per acre on 3 soil types are shown in Table 4.

On Yazoo soil the yields of cane and of sugar per acre were increased significantly by the use of 36 pounds of nitrogen per acre as compared to the unfertilized controls. The yields of cane and of sugar per acre were increased significantly by the use of 96 pounds of nitrogen per acre as compared to 36 pounds of nitrogen, but the yields were not significantly better than were obtained from the use of 60 pounds of nitrogen. As in the case of plant cane, sucrose and purity of crusher juice were slightly depressed by each increment of nitrogen.

On Sharkey soil none of the rates of nitrogen used appreciably affected the sucrose or purity of the crusher juice. Yields of cane and of sugar per acre were significantly increased by the use of 36 pounds of nitrogen per acre as compared with the unfertilized controls, and an additional significant increase in yield of cane and sugar resulted from the use of 60 pounds of nitrogen per acre. The yields of cane and sugar per acre resulting from the use of 60 and 96 pounds of nitrogen per acre were practically identical.

On Franklin soil none of the rates of nitrogen used appreciably affected the sucrose or purity of the crusher juice. The yield of sugar per acre was significantly increased by each nitrogen treatment, as compared to the next lower rate of application. Yields of cane increased correspondingly with increased amounts of nitrogen.

On Lintonia soil only 2 tests including these rates of nitrogen have been conducted. The average results of these tests show a substantial increase in yield of sugar per acre from the use of 36 pounds of nitrogen per acre as compared to the unfertilized controls, and a good additional increase from the use of 60 pounds of nitrogen per acre. The yield of sugar per acre resulting from the use of 96 pounds of nitrogen per acre was only slightly greater than was obtained with the use of 60 pounds of nitrogen.

Stubble

Table 4—Effects of varying rates of Nitrogen fertilization on yields of sugar and cane and on sucrose and purity of crusher from plant cane grown on 3 of the major soil types.

Pounds Nitrogen per acre	Soil type and number of tests	Sucrose %	Purity %	Pounds sugar per acre	Tons cane per acre
0	Yazoo	13.95	82.69	3486	18.55
36		13.80	81.92	4068	22.24
60	24	13.61	81.18	4167	23.20
96		13.51	80.72	4295	24.15
Diff. for sig. (P.=.05)		0.19	0.61	224	1.34
0	Sharkey	14.55	83.06	2120	11.09
36		14.52	83.06	2785	14.71
60	23	14.46	82.98	3048	16.13
96		14.50	82.85	3072	16.18
Diff. for sig. (P.=.05)		0.20	0.63	229	1.37
0	Franklin	14.51	82.41	2719	13.15
36		14.74	82.80	3299	15.72
60	21	14.61	82.46	3562	17.18
96		14.95	82.23	3857	18.53
Diff. for sig. (P.=.05)		0.21	0.65	239	1.42

[1] The author is indebted to Mr. Lewis A. Hurst, formerly in charge of soil Fertility Research on sugarcane, and to Mr. A. M. O'Neal and Mr. R. L. Holmes, who conducted most of the field experiments used in this summary.

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Entries of Sugar From Offshore Areas Through May 31, 1945

(Official Release)

The Sugar Branch of the Office of Marketing Services announced recently that the quantity of sugar entered for consumption from all offshore areas during January-May amounted to 2,460,792 short tons, raw value. For the corresponding period last year the quantity entered totaled 2,253,691 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 128,522 short tons of sugar, raw value, was marketed by the mainland cane area and 301,239 tons by the continental beet area during January-April as compared with 192,960 tons and 322,983 tons, respectively, during the same period of 1944.

Area	Quantity entered through May 31 (short tons—96° equivalent
Cuba	1,926,902
Hawaii	258,664
Puerto Rico	237,688
Foreign Countries other than Cuba	37,538
Total	2,460,792

DIRECT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through May 31.

Area	Quantity entered through May 31: Sugar Polarizing 99.8° and above	Sugar Polarizing less than 99.8°	Total
	(short tons, 96° equivalent		
Cuba	113,829	10,643	124,472
Puerto Rico	31,887	4,322	36,209
Total	145,716	14,956	160,681

ENTRIES FROM FULL DUTY COUNTRIES

Area	Quantity entered through May 31[1] (pounds)
French West Indies	75,075,893
Tons	37,538

[1] Excluding the first 20,000 pounds entered. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

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A Fresh Point of View

By C. J. Bourg

The public statements of Secretary of Agriculture Clinton P. Anderson have been encouraging to the domestic sugar industry. The report of the Anderson Committee recognized the necessity for encouraging and assisting the production of sugar on the Mainland.

When speaking before the Advertising Federation of America in New York City on July 11th, Secretary Anderson made this significant reference:

"Take sugar for example. Our only hope right now is in increased production on continental United States. Cuba gave us her greatest sugar crop in 1944 —more than 5½ million tons. Some of that was due to carry-over cane which she could not harvest in 1943. Her 1945 crop was estimated at 4,600,000 tons, but when the grind began, we revised our figures steadily downward to 4,300,000, to 4,100,000, and the final result was under 4,000,000 tons. That threw off all our calculations. But we under-estimated our industrial use by 480,000 tons and we were more than 300,000 tons off in calculating the home canning issuance by local rationing boards.

"That's why we must be realistic about sugar, why editorials and advertisements need to tell and retell the story of our dwindling stocks. The man who wastes sugar today is the enemy of the American people, and you and I must check him if we can.

"Help can only come from the American farmer. Drought has continued in Cuba until recently. The 1946 Cuban crop will likely be below the 1945 figure. Puerto Rico will do well to make a millon tons and Hawaii cannot be expected to increase its already fine record. The sugar mills of the Philippines are apparently in fair condition. The largest one is intact, even to railroad lines and equipment. But the plantations may be growing back to jungle. Even if Java should be recaptured, its plantations may have gone back to jungle like the rubber plantations of Malaya are reported to have gone. The jungle is a ruthless enemy of man-made agriculture.

"So on the American producer of beet and cane sugar we must pin our hopes for increased production and the protection of thousands of small businesses in 1946. And if the American farmer breaks his back and gives it to you, will you forget him if he needs protection in 1947?"

We derive a hopeful stimulant from the above statement because it indicates that the new Secretary of Agriculture has accepted as part of the function of his high office the sponsorship of American farmers, including those who grow sugarcane and sugar beets. For many years, the industry had to survive under a Secretary of Agriculture who had publicly labeled it as "uneconomic and inefficient". He had further stated that the continental sugar industry should never have been started in the U. S. and should be liquidated; if it took a hundred years. At least the present Secretary challenges the advertisers in New York City with respect to the "protection" which may be asked for and obviously will be deserved to the extent that the American farmer contributes to overcoming the sugar shortage.

The record of Louisiana during the war years shows an average production of 400,000 tons of sugar. The prospects in 1945 permit the anticipation of a crop well above this high average. Given a fair-minded and understanding Secretary of Agriculture and a grateful public, we should be able to look to the future with more confidence.

Secretary Anderson, when discussing the food situation on the radio June 16th, also had this to say:

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"Now about sugar. It may be several years before the important sugar producing and exporting countries regain their pre-war output. Until that time, nations that import as large a part of their total supplies as the United States does, can expect to be short of sugar."

It all adds up to a recognition of the value of domestic production and the disadvantage of depending too greatly upon the importation of sugar.

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By C. J. Bourg

WPB has allocated for use in the Louisiana sugarcane area substantially the same quantity of fertilizer for the 1946 crop, as was allocated last year. 17,000 tons of Cyanamid will be available for direct application on sugarcane acreage provided growers place their orders early.

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Each year in February, March and April the fertilizer situation becomes very tight. Those growers who failed to take delivery before that tightness, have each year found themselves caught short. The League has made arrangements for your needs; it is up to you to insure your getting a proportionate share.

Generalized Factors for Computing Varietal Yields of Sugar From Results of Field Tests With Sugarcane

By George Arceneaux, Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.[1]

Basic data from which yields of sugar are calculated under experimental conditions ordinarily consist of Brix and percent sucrose determinations (pol.) on juice obtained from a single crushing of the cane. In applying an empirical formula to results of tests involving varietal comparisons it is necessary to make appropriate allowance for varietal differences in milling qualities or to assume that such differences are insufficiently great to affect materially the interpretation of results. In the light of existing differences between varieties of known milling qualities, it would be dangerous to assume that differences in milling qualities between untested seedlings are negligible. There is urgent need therefore of a method whereby comparative milling qualities of new sugarcane seedlings may be determined during initial phases of

TABLE 1. Varietal differences in milling factors in relation to indicated yield of recoverable sugar.

Variety	CRUSHER JUICE		NORMAL JUICE			Indicated yield of 96° sugar per ton of cane				Systematic error in calculated sugar yield due to failure to correct for varietal differences in:		
	Brix	Percent Sucrose (Pol.)	Extraction percent cane	Reduction factor for Brix	Reduction factor for percent Sucrose	(A)	(B)	(C)	(D)	Reduction factors (B-A)	Normal juice extraction (C-A)	Reduction factors and normal juice extraction (D-A)
Co. 290	15.84	12.42	83.43	.9913	.9835	188.1	188.1	188.1	188.1	------	------	------
Co. 281	16.93	14.04	80.15	.9844	.9688	206.7	210.8	215.2	219.3	4.1	8.5	12.6
C. P. 807	15.80	13.01	78.32	.9887	.9749	187.8	190.2	200.1	202.5	2.4	12.3	14.7
C. P. 28/19	18.34	15.55	77.05	.9863	.9718	223.5	227.1	242.1	245.7	3.6	18.6	22.2

A. Normal juice extraction and reduction factors as observed with individual varieties.
B. Reduction factors as observed with Co. 290 and normal juice extraction as observed with individual varieties.
C. Normal juice extraction as observed with Co. 290 and reduction factors as observed with individual varieties.
D. Normal juice extraction and reduction factors as observed with Co. 290.

agronomic tests.

A method whereby tests of millability may be made on relatively small lots of sugarcane has been described in a previous paper (1). According to this method, small and highly comparable samples of sugarcane are milled to commercial levels of extraction under carefully controlled conditions by use of laboratory equipment permitting a reasonably good duplication of factory conditions. Sucrose extraction ordinarily ranges from 93 to 95 percent. From a knowledge of weights of cane, extracted juice, and bagasse together with the customary analytical information on juice and bagasse it is possible to calculate all essential milling data.

In Louisiana it is customary to express milling results in terms of normal juice.* In calculating theoretical sugar yields on this basis it is necessary to assume certain values for Brix reduction factor, sucrose reduction factor and for the ratio of weight of extracted juice to weight of cane. The importance of varietal differences as related to such factors is illustrated by data presented in table 1. From a comparison of different values calculated for yield of sugar per ton of cane as based on 4 different sets of assumed conditions it is possible to measure separately the effects of varietal differences in reduction factors and in normal juice extraction on indicated yield of sugar. The bias in calculated sugar yields arising from uncontrolled varietal differences in reduction factors proved of minor importance as shown by differences ranging from 2.4 pounds to 4.1 pounds of sugar per ton of cane in contrast with differences of 8.5 to 18.6 pounds attributable to uncontrolled varietal differences in normal juice extraction. Failure to bring either reduction factors or normal juice extraction under experimental control gave systematic errors ranging from 12.6 to 22.2 pounds of 96° sugar per ton of cane.

A difference of 22.2 pounds is about 4 times the standard error of an average varietal difference in yield of sugar per ton of cane as determined from results of an ordinarily well replicated field experiment. The importance of bringing the source of such bias under experimental control is therefore obvious.

Results presented in table 1 were obtained by first conducting a series of dry milling operations as per customary procedure for calculating Brix reduction factors under factory conditions. This was followed by further repeated milling in the course of which water equivalent to 18% of the weight of the cane was sprinkled on the bagasse, and the extraction process carried to levels commonly attained in the commercial operation.

Analytical and extraction values for normal juice were calculated in accordance with the procedure described by Spencer and Meade (4) and meanings of various terms employed are taken as defined in Chapter XXXIII of their book. The Brix of normal juice of each lot of cane was determined on the basis of individual results observed in the dry milling test. The purity of normal juice was assumed to be the same as that of the dilute juice (mixture of all extractions). Percent sucrose of normal juice was calculated by multiplying Brix of normal juice by purity of dilute juice. Thus there was a separate determination of Brix reduction factor, Sucrose reduction factor and Normal juice extraction on each lot of cane.

In view of the procedure followed in converting observed mill results to the basis of normal juice as indicated above it is readily seen that values for Brix reduction factor on the one hand and for sucrose reduction factor and normal juice extraction percent cane on the other have a complementary relationship. A deviation in assumed value for Brix reduction factor will be compensated for by reciprocal differences in computed values of the other two factors. This is illustrated by data given in table 2. "Normal juice" analysis and extraction were calculated for each variety on the basis of observed Brix reduction factor and again calculated by assuming a constant value of .985 for Brix reduction factor. It will be noted that available sugar yields determined according to the two methods are identical for each variety. Measurements of Brix reduction factors are of no fundamental importance in experimental milling tests. In fact final extraction results could just as well be expressed in terms of crusher juice Brix.

In conducting routine tests to measure varietal differences in millability, the procedure followed at the Houma Station is as follows:

1. Sample of cane crushed, and crusher juice weighed and analyzed for Brix and percent sucrose. Sucrose content is determined on the basis of polarization.
2. Bagasse collected and milled 4 times under hydraulic pressure (32 tons on 14-inch mill) in course of which cold water equivalent to 18% of weight of cane is sprinkled on the bagasse. Extracted juice is weighed and analyzed. Values for Brix, percent sucrose, purity and extraction of dilute juice are determined mathematically from values obtained in 1 and 2. Values for Brix and percent sucrose obtained in this way are essentially the same as based on an analysis of a sample composed of aliquot parts of the two lots of juice.
3. Brix of normal juice is assumed to be .985 of Brix of crusher juice from the same sample. Corresponding values for percent sucrose and juice extraction percent cane are calculated according to the procedure outlined by Spencer and Meade (4) pp. 369-370.

TABLE 2. Calculated analyses of normal juice and computed yields of recoverable sugar as based on: (1) generalized values and (2) individual varietal values for Brix reduction factor.

Variety	Crusher Juice		"Normal Juice" as based on varietal milling factors observed in test					"Normal Juice" as based on assumed Brix reduction factor of .985 for all varieties with appropriate adjustments in other values					
	Brix	Percent Sucrose (Pol.)	Brix	Percent Sucrose (Pol.)	Purity	Juice extraction percent cane	Indicated yield of 96° sugar per ton of cane	Brix	Percent Sucrose (Pol.)	Purity	Sucrose Reduction factor	Juice extraction percent cane	Indicated yield of 96° sugar per ton of cane
		%		%		%	pounds		%	%		%	pounds
Co. 290	15.84	12.42	15.702	12.215	77.793	83.43	188.1	15.602	12.137	77.793	.97721	83.964	188.1
Co. 281	16.93	14.04	16.666	13.602	81.615	80.15	206.7	16.676	13.610	81.615	.96937	80.101	206.7
C. P. 807	15.80	13.01	15.621	12.683	81.192	78.32	187.8	15.563	12.636	81.192	.97125	78.614	187.8
C. P. 28/19	18.34	15.55	18.089	15.111	83.537	77.05	223.5	18.065	15.091	83.537	.97048	77.152	223.5

The important information to be derived from such tests is an estimate of the effect of varietal differences in milling qualities on the presumed yield of available sugar as calculated from a given crusher juice analysis. Essentially the problem is this: Given a set of factors appropriate for estimating the yield of available sugar from variety A, what adjustments must be made in the case of variety B differing significantly from variety A in milling qualities?

Table 3 gives indicated yields of sugar per ton of cane (a) as based on results obtained in the test and (b) as calculated by assuming, for each variety, milling values for juice extraction and sucrose reductor factor as observed with Co. 281 in the same test. The ratio between a varietal yield as given in column (a) and the corresponding value in column (b) designated as the varietal correction factor, may be taken as a measure of the net effect of observed varietal differences in millability on presumable sugar yields. Thus the factor 1.062 will convert a sugar yield calculated on the basis of Co. 281 extraction to a value applicable to Co. 290 and the factor .965 will render sugar yields so calculated applicable to C.P. 28/19.

Table 4 gives correction factors for each of four varieties in comparison with Co. 281 as determined from the results of mill tests on samples of cane from each of four localities during 1935 and 1936. As will be noted, the differences in millability between varieties have been very consistently reflected in the "varietal correction factors". A statistical analysis of the data reveals highly significant differences between varieties and gives no evidence that values as determined for individual varieties have been significantly affected by differences between localities or years.

TABLE 3. Derivation of Varietal Correction factors from results of an experimental milling test.

Variety	Crusher Juice		Indicated yield of 96° sugar per ton of cane		(c) Varietal Correction Factor $\left(\frac{a}{b}\right)$
	Brix	Percent Sucrose (Pol.)	(a) Based on milling results obtained with the particular variety	(b) Based on milling results obtained with Co. 281	
Co. 290	15.84	12.42	188.1	177.1	1.062
Co. 281	16.93	14.04	206.7	206.7	1.000
C. P. 807	15.80	13.01	187.8	190.8	.984
C. P. 28/19	18.34	15.55	223.5	231.6	.965

In an attempt to determine the effect of additional variables on varietal milling qualities, tests were conducted on plant-cane and first stubble of Co. 281, Co. 290 and C.P. 28/19 at six different dates between September 24 and December 15, during 1935 and 1936, results of which are summarized in table 5. Again, we find a highly significant variety effect and no indication that the other factors studied, namely, differences between crops (plant and stubble), years, or dates of harvest have significantly affected values of "varietal correction factors" as calculated. Thus the results indicate that such a factor for any given variety will closely approximate a constant if determined with a sufficient degree of accuracy. Hence, the use of appropriate generalized factors should permit an unbiased determination of sugar yields from the usual analytical results obtained in connection with variety tests.

Table 6 gives the mean correction factor value for each of 49 varieties as determined in experimental milling tests during the period 1932-1944. As will be noted, some of the varietal averages are based on relatively numerous determinations e.g., 59 in the case of C. P. 28/19 and 44 in the case of Co. 290. In such instances it is not likely that varietal averages will change greatly as a result of future tests. On the other hand some of the averages shown in the table are based on relatively few determinations and cannot be taken as final.

According to the system now followed, varieties are grouped at intervals of .02 in the assignment of varietal correction factors. Group values assigned so far are as follows: .92, .94, .96, .98, 1.00, 1.02, 1.04, 1.06.

Determination of theoretical sugar yields as per the customary procedure involves:

(a) Converting of crusher juice values to the basis of normal juice.
(b) Calculation of normal juice purity.
(c) Application of the Winter-Carp-Geerligs (3) formula to values calculated as per above and their derivatives based on assumed values for normal juice extraction and boiler house efficiency number.

Sugar yield values calculated in this manner can be made applicable to specific varieties through the use of appropriate correction factors.

As a routine procedure, the calculation of sugar yields from results of field experiments is greatly simplified by the use of factors which may be applied directly to unreduced values for Brix and percent sucrose. The mathematical derivation of such factors and method of their calculation have been given in a previous paper (2). As an illustration, the yield of 96° sugar per ton of cane with crusher juice analysis of Brix 15.25 and percent sucrose 12.50 would be as follows: (12.50) (x) minus (15.25)(y).

In the average of all tests so far conducted milling factors of the control variety Co. 281 have been approximately as follows: Brix reduction factor .985 Sucrose reduction factor .970; Normal juice extraction 76 percent. It may be shown that, with factors as above given and an assumed boiling house efficiency number of 100; $x = 21.5017$ and $y = 6.2383$. These factors would apply to Co. 281 and other varieties in the millability group of 1.000. Hence the indicated yield of 96° sugar per ton of cane of the variety Co. 281 at the analysis given would be (12.50) (21.5017) minus (15.25) (6.2383) = 173.6 pounds.

The value 21.5017 for x is obtained by multiplying 29.16667 by (.76)(.97)(1.00), and that of 6.2383 for

TABLE 4 —"Varietal correction factors" as calculated from laboratory milling tests on sugarcane samples from four test fields during 1935 and 1936.

Variety	Tests during 1935					Tests during 1936				
	Albania	L. Landry	Erath	Greenwood	Average	Albania	L. Landry	Erath	Greenwood	Average
Co. 281	1.00	1.00	1.00	1.00	1.000	1.00	1.00	1.00	1.00	1.000
C. P. 28/11	.96	.95	.94	.95	.950	.95	.96	.96	.95	.955
C. P. 28/19	.94	.95	.94	.97	.950	.97	.97	.97	.96	.967
C. P. 29/320	.96	.99	.96	.99	.975	.98	.98	.96	.99	.977
C. P. 29/116	1.04	1.08	1.01	1.07	1.057	1.05	1.05	1.06	1.06	1.055

y by multiplying 8.33333 by (.76)(.985)(1.00). For the derivation of the root numbers 29.16667 and 8.33333 the reader is referred to the report previously cited (2).

x and y factors for varieties of other groups would bear the same relationship to 21.5017 and 6.2383, respectively, as the particular varietal correction factor bears to 1.000. Thus in the case of varieties in group .92 the x factor would be 19.7816 (obtained by multiplying 21.5017 by .92) and the y factor would be 5.7392 (obtained by multiplying 6.2383 by .92). In this case the indicated yield of 96° test sugar from a variety with a varietal correction factor of 0.92 the crusher juice from which showed by analysis 12.50 percent of sucrose and 15.25 Brix would be (12.50)(19.7816) minus (15.25)(5.7392) = 159.7 pounds, as compared with a yield of 173.6 pounds that would be indicated by omitting the appropriate varietal correction factor.

Discussion and Conclusions

Table 6 gives the average fiber content as determined for each of 49 varieties together with the varietal correction factor value. It is of course widely recognized that the percentage of extractable juice bears an inverse relationship to fiber content of the cane. This is borne out by a rather consistently maintained negative relationship between fiber content and varietal correction factor. Therefore from a knowledge of relative fiber contents of different varieties, a comparatively good estimate of their relative milling qualities could be made. However in generalizing as to the effect of fiber on extraction it should be recognized that the composition of fiber may vary between different varieties and between different conditions within the same variety. Such differences may in turn have an important bearing on extraction.

Table 7 gives fiber content of cane and of bagasse as observed with plant cane and first stubble of Co. 281, Co. 290 and C. P. 28/19 at different dates from September 25 to December 26 as determined in connection with tests from which data given in table 5 were derived. It is interesting to note that there was a gradual increase in fiber percent bagasse (and conversely a presumable decrease in percentage of residual juice in bagasse) with an increase in fiber content of the cane.

TABLE 7. Fiber content of sugarcane and of bagasse as related to date of harvest with Co. 290, Co. 281 and C. P. 28/19 in tests at U. S. Sugar Plant Field Station, Houma, Louisiana during 1935.

Date	Plant Cane		First Stubble	
	Fiber percent cane	Fiber percent bagasse	Fiber percent cane	Fiber percent bagasse
Tests of Co. 290				
Sept. 25	8.22	44.53	9.19	43.17
Oct. 15	9.15	45.17	9.45	44.17
Nov. 1	9.37	46.41	10.03	45.98
Nov. 14	9.75	46.26	10.51	47.48
Dec. 3	10.28	50.25	10.73	49.62
Dec. 17	10.06	49.85	10.56	50.73
Dec. 26	10.20	51.79	10.96	50.68
Tests of Co. 281				
Sept. 25	9.79	43.37	10.84	46.13
Oct. 15	10.36	44.85	12.05	49.90
Nov. 1	11.24	47.18	12.00	47.78
Nov. 14	12.74	50.95	13.28	50.66
Dec. 3	11.91	52.23	12.95	52.86
Dec. 17	12.49	53.10	12.88	51.18
Dec. 26	12.70	51.65	12.96	52.47
Tests of C. P. 28/19				
Sept. 25	11.57	45.13	12.60	47.20
Oct. 15	12.31	49.17	13.93	48.73
Nov. 1	12.98	50.11	13.80	49.48
Nov. 14	13.49	50.44	13.95	48.81
Dec. 3	13.99	53.08	14.86	53.90
Dec. 17	14.50	55.33	15.75	54.71
Dec. 26	13.17	54.20	15.87	55.70

Table 8 gives average values for fiber content of bagasse as observed with each of 6 important varieties at different levels of fiber in cane. These data as assembled reveal some rather interesting relationships. Again, there was, generally speaking, an increase in fiber content of bagasse with a rise in percentage of fiber in cane. This relationship however was apparently subject to some modification. For each variety there was a characteristic level of fiber in cane beyond which further rises gave no additional increases in percentage of fiber in bagasse. In the case of Co. 281, this point was reached at a fiber content of cane approximating 13 percent where the percentage of fiber in bagasse "flattened" out at approximately 49.5 percent. With C.P. 28/19, on the other hand this point was reached at approxi-

TABLE 5—"Varietal correction factors" as calculated from laboratory milling tests on sugarcane samples at different dates during 1935 and 1936.

Date	1935						1936					
	Plant Cane			First Stubble			Plant Cane			First Stubble		
	Co. 281	Co. 290	C. P. 28/19	Co. 281	Co. 290	C. P. 28/19	Co. 281	Co. 290	C. P. 28/19	Co. 281	Co. 290	C. P. 28/19
Sept. 24	1.00	1.03	.95	1.00	1.08	.97	1.00	1.08	.95	1.00	1.04	.95
Oct. 15	1.00	1.10	1.01	1.00	1.06	.95	1.00	1.06	.95	1.00	1.06	.96
Nov. 1	1.00	1.08	.98	1.00	1.04	.95	1.00	1.06	.97	1.00	1.04	.96
Nov. 15	1.00	1.03	.97	1.00	1.06	.93	1.00	1.06	.94	1.00	1.10	.97
Dec. 1	1.00	1.05	.97	1.00	1.04	.95	1.00	1.05	.93	1.00	1.05	.95
Dec. 15	1.00	1.05	.97	1.00	1.05	.96	1.00	1.06	.96	1.00	1.09	.97
Dec. 28	1.00	1.05	.96	1.00	1.06	.94	1.00	1.07	.94	1.00	1.05	.96
Average	1.00	1.056	.973	1.000	1.056	.950	1.00	1.063	.949	1.000	1.061	.960

Values averaged according to date

Variety	Sept. 24	Oct. 15	Nov. 1	Nov. 15	Dec. 1	Dec. 15	Dec. 28	General Average
C. P. 28/19	.955	.967	.965	.952	.950	.965	.950	.958
Co. 290	1.057	1.070	1.055	1.062	1.047	1.062	1.057	1.059

TABLE 6—Mean values for varietial correction factor and fiber percent cane as calculated from results of experimental milling tests during the period 1932-1944, inclusive

Variety	Number of milling tests	Varietal correction factor	Fiber percent cane*	Variety	Number of milling tests	Varietal correction factor	Fiber percent cane*
C. P. 33/409	6	.925	15.30	C. P. 36/185	6	.996	12.63
34/53	5	.938	15.72	34/151	6	.998	13.97
36/17	4	.942	15.14	34/75	6	1.000	12.50
33/372	5	.944	15.05	Co. 281**	72	1.000	12.41
34/54	4	.949	15.50	C. P. 36/80	4	1.001	13.18
38/18	4	.958	13.71	36/19	4	1.003	12.52
**28/11	33	.959	14.59	**29/120	4	1.009	12.20
**28/19	59	.960	14.68	36/85	4	1.012	12.91
34/21	11	.960	13.94	35/14	4	1.014	12.00
34/92	4	.963	14.23	36/183	9	1.018	11.28
**33/425	4	.966	13.28	**29/103	6	1.020	11.93
**33/310	5	.969	13.64	36/70	4	1.022	11.65
**34/120	12	.974	13.96	34/115	7	1.032	11.94
**807	20	.975	14.22	36/50	6	1.032	11.09
36/161	8	.976	14.09	36/165	4	1.034	11.34
34/1	9	.978	12.96	34/80	10	1.035	10.88
31/529	5	.981	13.13	32/206	4	1.038	11.00
36/75	6	.982	13.32	36/13	10	1.039	11.04
36/191	4	.983	13.84	34/139	8	1.042	10.87
36/105	4	.983	13.48	36/94	4	1.043	11.48
**29/320	33	.985	13.81	**29/116	28	1.048	10.87
36/62	4	.990	12.48	36/111	6	1.050	10.61
34/141	4	.994	12.82	Co. 290**	44	1.054	10.56
34/86	6	.996	12.57	C. P. 29/99	3	1.067	9.65
36/178	4	.996	13.37				

*Average varietal values as actually observed were not all from the same series of tests and therefore not strictly comparable. Values for fiber percent cane shown in this column were adjusted as illustrated by the following examples:

(a) Fiber content of C. P. 33/409 in average of 6 tests in which the variety occurred, 14.94%.

(b) Fiber content of Co. 281 in the average of the 6 tests, 12.12%.

(c) Ratio of C. P. 33/409 fiber content to Co. 281 fiber content $=\left(\frac{14.94}{12.12}\right)=1.233$.

(d) Calculated fiber content of C. P. 33/409 on the basis of an average of 12.41 percent for Co. 281 as maintained in the average of all tests=12.41% x 1.233 =15.30%.

** Varieties grown commercially. Others have not been released.

mately 15.5 percent fiber in cane, beyond which the percentage of fiber in bagasse varied inconsistently between 53.4 and 54.7.

From a consideration of data cited above it would seem that the capacity of bagasse for retention of residual juice may vary greatly with different lots of cane. To a large degree such variations are negatively correlated with the percentage of fiber in cane, but departures from this relationship apparently associated with varietal differences detract from the value of generalized adjustment terms for varietal extraction based on fiber content alone. Therefore, comparative extraction values based on actual tests are to be preferred to calculated values based on fiber content and the necessary theoretical assumptions.

Laboratory-Scale tests of milling qualities as described in this report offer several important advantages over mill tests on factory scale, chief among which might be mentioned: (1) The small quantity of cane needed makes it possible to conduct the necessary tests at a much earlier stage. (2) Variations in fiber content and other factors affecting millability can be kept under more accurate experimental control. (3) Such experimental milling tests can be replicated without difficulty. This adds greatly to the accuracy of average results. (4) The laboratory-scale procedure lends itself very readily to simultaneous measurement of the fiber content of cane. Fiber determinations paralleling extraction measurements afford a good check on observed results.

It should perhaps be poointed out that juice extraction values as obtained in milling tests above described are higher than may ordinarily be expected under typical factory conditions in Louisiana and that the reduction factors for Brix and sucrose content apply only to the prevailing set of milling conditions. Cane samples were entirely free of trash and the mill-work was such as may be expected only at the more efficient factories. Also, the initial crushing probably removed a higher percentage of the juice than is ordinarily extracted by a factory crusher. It is believed however that, in a relative sense, varietal differences as to milling qualities revealed in such tests may be taken as broadly representative. Therefore, while varietal correction factors in a restricted sense apply specifically to conditions under which the tests were actually conducted

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TABLE 8—Relation between fiber content of cane and fiber content of bagasse as observed with different varieties of sugarcane in experimental milling tests.

Fiber percent cane	Number of tests							Fiber percent bagasse						
	Co. 290	C. P. 29-116	Co. 281	C. P. 29-320	C. P. 28-11	C. P. 28-19	All tests	Co. 290	C. P. 29-116	Co. 281	C. P. 29-320	C. P. 28-11	C. P. 28-19	All tests
9.01- 9.50	5	2					7	44.7	40.3					43.44
9.51-10.00	1	2					3	46.3	46.2					46.23
10.01-10.50	7	3	3				13	47.6	43.4	43.5				45.68
10.51-11.00	10	3	1				14	46.9	45.2	46.1				46.48
11.01-11.50	3	4	9				16	46.3	46.5	45.9				46.12
11.51-12.00	1	5	8				14	49.2	47.4	47.3				47.47
12.01-12.50		--	9			4	13	----	----	48.6			45.9	47.77
12.51-13.00		1	13	3	2	3	22	----	48.7	49.9	45.2	45.5	47.2	48.44
13.01-13.50	1		12	4	5	3	25	48.3		49.5	47.7	45.7	48.9	48.33
13.51-14.00			2	7	4	7	20			49.0	49.9	47.9	49.6	49.30
14.01-14.50			2	1	1	3	7			49.6	49.7	48.3	49.9	49.56
14.51-15.00				1	2	5	8				52.8	47.7	51.6	50.77
15.01-15.50				4	4	4	12				51.4	50.6	51.2	51.07
15.51-16.00				2	5	2	9				53.5	52.5	53.6	52.97
16.01-16.50				1	1	1	3				53.4	51.6	54.7	53.23
16.51-17.00					1	3	4					52.9	53.8	53.57
17.01-17.50						1	1						53.4	53.4

it is believed that such factors can be applied with reasonable accuracy to correct for varietal differences in milling qualities at any given level of extraction within the usual range of commercial milling.

Summary

Results of experimental tests extending over a period of 13 years indicate that varietal differences in milling qualities, unless brought under experimental control, can be an important source of systematic error in the calculation of theoretical yields of sugar from sugarcane. For the sake of convenience, the combined effect of differences in milling qualities is resolved to a single numerical value designated as the "Varietal correction factor". Results indicate that, for any given variety in comparison with a control, such a factor will closely approximate a constant. With Co. 281 as control, correction factors for varieties tested have ranged from .925 to 1.067.

The application of the Winter-Carp-Geerlings formula to juice analyses may be simplified to the following operation:

$S' = (sx)$ minus (By) in which

$S' =$ Pounds of 96° sugar per ton of cane

$s =$ Value for sucrose percent crusher juice

$x =$ Calculated factor

$B =$ Brix of crusher juice

$y =$ Calculated factor

Through the use of x and y factors appropriately adjusted for varietal differences in milling qualities, determination of unbiased values for indicated yield of sugar per ton of cane from results of crusher juice analyses is reduced to a very simple operation.

Evidence of differences in capacity for retention of juice by bagasse as observed between different varieties and between different levels of fiber content within the same variety detracts from the value of fiber content of cane as a criterion of presumed extraction.

[1] The author is indebted to S. F. Sherwood, Senior Biochemist, Division of Sugar Plant Investigations, for cooperation in planning and conducting milling tests; to Lester G. Davidson, of the above Division, R. B. Bisland, and Lionel Harmon, formerly of the same Division, for much of the analytical work; to I. E. Stokes, and Leo P. Hebert, of the above Division, R. T. Gibbens, Jr., and C. C. Krumbhaar, formerly of the same Division, for collecting samples of cane and otherwise assisting with the tests; to J. J. Munson, President of South Coast Corporation, for valuable assistance in connection with engineering and mechanical problems.

* Equivalent to "Undiluted Juice" as defined by the International Society of Sugar Cane Technologists (see Cane Sugar Handbook, Spencer-Meade, 8th ed., 1945, page 580).

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Summer Planting of Sugarcane to Control Wireworms in the Vicinity of Edgard, La.

By E. K. Bynum, J. W. Ingram, W. E. Haley, and L. J. Charpentier

United States Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine

There are areas in the vicinity of Edgard, La., in which wireworms so deplete the stand of cane planted at the usual time in the fall that a loss results from growing the plant-cane crop and it is not profitable to retain the field as stubble cane. The wireworms gnaw out the "eyes," or cane buds, on the stalks of fall-planted seed cane during the fall and winter months before growth starts.

To overcome such losses an experiment was initiated in 1941 to compare summer planting with fall planting. Four replications of each of four varieties were planted between August 1 and 15, and four replications of the same varieties were planted between September 20 and October 10. Each plot was three rows wide and 50 feet long. The rate of planting was two running stalks per row in all cases. Results of plant counts made in six random 5-foot samples per plot are given in table 1. It may be seen from this table that the stand of cane was more than doubled by summer planting and for C. P. 29/320, a variety frequently planted in that area, over six times as many plants were obtained.

In 1944 three experiments in summer planting were conducted, two in light soil and one in a mixed type of soil, with two varieties of cane in each experiment. Plantings were made between August 1 and 10, and again on September 20. Plantings of each variety were replicated two or more times for each date of planting in each experiment. Each plot was three rows wide and extended the entire length of the field. On March 23, 1945, counts were made of the plants in six to nine 25-foot lengths of row in each plot. Results of these counts are given in table 2. It may be seen that in both varieties in each experiment over six times as many plants per acre came up in the summer-planted as the fall-planted plots. Wireworm injury was so heavy in all experimental areas that the fall-planted cane gave a stand of cane that was far below normal.

Results of these experiments in 2 years show that in wireworm-affected areas disastrous losses in stands of cane may result from fall planting, and that unusually good stands can be obtained by summer planting. It is therefore recommended that in areas subject to heavy wireworm injury cane be planted early in August if agronomically practical. Although summer planting may increase borer injury in the plant-cane crop, the increased yield through reduction of losses in stand caused by wireworms should be many times greater than any loss resulting from increased borer injury.

TABLE 1. Comparison of stands of cane resulting from summer and fall plantings, Johnson Plantation, 1941-42. Counts made on April 22, 1942.

Variety	Estimated average number of plants per acre	
	Summer-planted	Fall-planted
C. P. 29/116	39,270	10,950
Co. 290	19,470	8,730
C. P. 28/19	19,680	7,410
C. P. 29/320	21,870	3,450

TABLE 2. Comparison of stands of cane resulting from summer and fall plantings, Church and Johnson Plantations, 1944-5. Counts made on March 23, 1945.

Plantation	Soil type	Variety	Average number of plants per acre	
			Summer-planted	Fall-planted
Church	Light	C. P. 29/103	81,072	4,704
		C. P. 34/120	119,328	5,520
Johnson	Light	C. P. 34/120	118,880	8,832
		C. P. 29/120	73,200	6,000
	Mixed	C. P. 34/120	73,120	9,920
		C. P. 29/120	44,832	6,768

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THE SUGAR BULLETIN

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Secretary Anderson Asks Full Production and Provides Incentives

By C. J. Bourg

When Congressman Anderson submitted his very thorough and constructive report on The Sugar Situation, as Chairman of the War Food Investigating Committee, the domestic industry was well pleased because of the recommendations favorable to increased domestice production. However, when the President appointed Mr. Anderson to be Secretary of Agriculture and War Food Administrator, there were many who questioned that Secretary Anderson could carry out successfully the recommendations of Congressman Anderson.

During the first 30 days of Secretaryship, the statements officially and publicly made by Mr. Anderson affirmed a determination to carry on. Then on August 1st, the announcement was made of the incentive program for domestic sugarcane and sugar beet production in 1946. The next day the announcement was made of the support program for processing the 1945 sugar crops. Definitely, the Secretary has backed up in his talk with action.

A most encouraging feature has been the timing of these announcements. Growers of sugarcane in Louisiana are now preparing and planning for the planting of the 1946 crop of cane so that this firm advance notice of the prospects on the returns to be expected by growers from the 1946 crop will permit our farmers to plan on the basis of commitments. Secretary Anderson comes right out and says in plain English, "I am calling on all producers for full production." Thus the uncertainty is removed. The American Sugar Cane League has for a number of years been pleading with the U. S. Department of Agriculture for the announcement of determinations and programs sufficiently in advance to permit farmers to schedule their operations with certainty and without the discouraging fear of retroactive regulations.

Up to 1945, whatever assistance and encouragement has been offered has been through the producer of sugarcane. This year, processors will receive 15c per 100 lbs. of raw sugar, 96° equivalent. This is intended to equalize to some extent the increased cost of production under price ceilings. In addition, the processors who deliver raw sugar have been offered the advantage of the Commodity Credit Corporation absorbing the freight, less only the amount of freight to the nearest refinery. With the prospects of $7.00 for sugarcane in 1945 and $7.50 for cane in 1946, the lot of the cane grower has improved greatly. For the processor, who in most instances benefits from the grower program to whatever extent he may be a producer of sugarcane, the prospects are likewise improved over what they were in previous years.

The official announcements of August 1st and 2nd are as follows:

Increased Support Payments to Growers of 1946-Crop Sugar Beets and Cane

Increased producer support payments on 1946-crop sugar beets and sugarcane were announced today by Secretary of Agriculture Clinton P. Anderson.

"The 1946 program is being announced at this time to enable growers to plan for a maximum crop," the Secretary said. "Producers of both sugar beets and sugarcane have advised us that their production can be increased in 1946, and I am calling on all producers for full production. I am confident they will respond.

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"The 1946 crops represent the earliest opportunity for increased production of beets and cane. The acreage of 1945-crop sugar beets was planted some time ago, so the quantity of sugar that will be produced from this crop now depends largely on the weather. Also, harvesting of sugarcane is completed, or nearly so, except in Hawaii."

The 1946 program guarantees growers of sugar beets a national average return, including Sugar Act payments, of not less than $13.50 per ton of beets of the average quality of recent years. This compares with $12.50 in 1945. Under present market conditions, this guarantee for 1946 will call for a payment of nearly $4.00 per ton of average beets (in addition to Sugar Act payments) compared with a payment of about $3.00 per ton in 1945.

Growers of sugarcane for sugar in Louisiana, Florida, Puerto Rico, Virgin Islands and Hawaii will receive a payment of $2.10 per ton of average sugarcane, the payment in each producing area to be graduated upward or downward in accordance with the ratio of sugar recovered from the deliveries of the individual producer to sugar recovered from all deliveries in each area. The payment in the case of Louisiana growers will be equivalent to $2.04 per ton of "standard" sugarcane. In the case of Louisiana and Florida, this compares with $1.60 per ton of cane in 1945 and for other areas, on a cane equivalent basis, it compares with $1.21 in Hawaii, $1.08 in Puerto Rico, and $.90 in the Virgin Islands.

An additional provision, applying only to Louisiana and Florida sugarcane growers, authorizes payments of $2.10 per actual ton of frozen sugarcane that is salvaged either for sugar or molasses.

Secretary Anderson stated also that "in view of the importance of maximum sugar production at the earliest possible time, the Department of Agriculture—besides its regular wartime assistance to farmers—will give special emphasis and help in securing sufficient labor, fertilizer and machinery for sugar beet and sugarcane producers."

Details of the 1946 program, which will be carried out by the Commodity Credit Corporation, will be worked out and announced to producers as soon as possible. The price support payments, like the payments under the Sugar Act, are contingent upon an appropriation by Congress. Such appropriations are authorized by existing law.

Harvesting of the crops on which the payments will be made will begin early in 1946 in Hawaii, Puerto Rico and Virgin Islands, and in the fall of 1946 in Louisiana, Florida and the sugar beet areas.

THOMAS EMERSON,
Acting Director, Office of Economics Stabilization

Sugar Beet and Sugarcane Processors to Get Payments

The Department of Agriculture announced today that for the purpose of increasing the production of sugar, the following payments will be offered to processors:

1. The processors of 1945-crop sugar beets, 18c per 100 lbs. of refined sugar as an offset to increased production cost, and in addition up to 12½c per 100 lbs. of refined sugar of the amount by which production cost exceeds the net proceeds realized from the sale of sugar.

2. To processors of 1945-crop sugarcane in Louisiana and Florida, 15c per 100 lbs. of raw sugar, 96° equivalent.
3. To processors of 1946-crop sugarcane in the Virgin Islands, Puerto Rico and Hawaii, 15c per 100 lbs. of raw sugar, 96° equivalent.

The payments are intended to assist in defraying increased costs of processing these crops as contrasted with the costs in 1941. This condition under which the payments will be made will be specified in offers to be submitted to processors by the Commodity Credit Corporation.

The payments with respect to the Hawaiian, Puerto Rican and Virgin Islands 1946 crops will be contingent upon an appropriation by Congress. Such appropriations are authorized by existing law.

Processing of 1945-crop continental sugarcane and sugar beets will begin this Fall.

THOMAS EMERSON,
Acting Director, Office of Economics Stabilization

Sugar is the Foundation of All Life

(Reprinted from July 17th issue of Lamborn Sugar Market Report)

By William J. Robbins, Professor of Botany, Columbia University and Director of The New York Botanical Garden

The director of an institution concerned with the preservation, dissemination and advancement of knowledge about plants always welcomes an opportunity to point out their fundamental importance and essential character. This willingness is based on the belief that if enough people understood the importance of plants, an institution like The New York Botanical Garden would be placed in the enviable position of having more funds that it could use instead of less than necessary for its major functions.

Few of us, occupied as we are with the daily routine of living, realize the true significance of plants and the reasons for it; few of us realize that we are able to live and keep on living only because of the concurrent existence of plants; that if plants were eliminated, we and all animal life would disappear in short order.

Our dependence on plants is because the food we eat, whether it be fish, vegetable, fowl or meat, comes in the last analysis from plants and, in addition, the oxygen we breathe as well as the vitamins and indispensable amino acids, so essential for our nutrition, are derived from plants. In other words, without plants we would starve to death, die of suffocation and expire from a combination of deficiency diseases.

Why are we so dependent upon plants? The answer is simple, though an explanation and elaboration of the answer is more complex. We are so completely dependent upon plants (primarily those which contain the green pigment, chlorophyll) because they alone of all living organisms have the power to make sugar from the simple materials, carbon dioxide and water. We and other creatures are not able to duplicate this feat which is essential for the economy of nature.

The process by which this is accomplished is called photosynthesis. It occurs in the light in the presence of the green pigment, chlorophyll, so obvious in the leaves of grass or a maple tree. As the result of photosynthesis, water and gaseous carbon dioxide are combined to form sugar and oxygen. The process may be simply stated as follows: gaseous carbon dioxide in the presence of light and chlorophyll in the living plant combines with water to form gaseous oxygen and sugar.

We and other animals have no chlorophyll and cannot form sugar nor produce oxygen no matter how long we may bathe in the sun. In our bodies sugar is destroyed—split up into carbon dioxide and water —not made.

There is another important feature of photosynthesis which needs emphasis and that is this. It occurs only in the light, and part of the energy of the sunlight which falls on a green leaf is stored in the sugar which is made there. The best estimates state that the amount of energy fixed annually in this fashion is equivalent to 300,000,000,000 tons of coal. And note this. No other practical process has been discovered or devised which fixes the sun's energy in chemical compounds.

Yes, you may say, but animals use other things than sugar for food—for example, we eat oils, fats, starch and proteins and some animals can even digest wood, and while we can burn sugar and thus release the energy stored in it, we can also burn wood or coal, petroleum, palm oil or whale oil.

This is correct. However, all of these substances are made directly or indirectly from the sugar produced in photosynthesis. In fact, all constituents of the plant body (except those which are purely mineral) are made from this basic compound. The starch in a potato is constructed from the sugar synthesized in the leaf of a potato plant; the cellulose and lignin of wood is built from sugar made in the leaves of the tree of which the wood is a part; the oil in a peanut or soybean and the protein in wheat grains, the quinine in the bark of a cinchona tree, the digitalis of the foxglove, the opium of the poppy, the perfume given off by a rose and the pigment which colors its petals are all developed from sugar by the alchemy of the plant. Every organic compound in the plant, no matter what, is derived from sugar. So even if the diet of an animal were limited to vegetable foods containing starch, oil or proteins and no sugar, it would still be living at the expense of substances constructed from sugar, and we could not escape our dependence upon this fundamental substance by substituting meat, fish or eggs.

If you eat a beef steak or a lobster or drink a glass of wine, you are consuming food which was at one time sugar. If you dig your garden, play golf, drive a horse or an automobile, you are using some of the sun's energy originally fixed in sugar made by plants in the process of photosynthesis. This energy transferred from the original sugar to the substances derived from it is released from the food you or the horse ate or from the gasoline burned in the automobile.

It is justifiable, therefore, to refer to sugar as the foundation of life, the substance upon which in the last analysis our existence and the development of modern civilization rests. This situation seems likely to continue until some way is found of duplicating in a test tube in a chemical laboratory the photosynthetic activity of the green plant or until some other primary source of energy is available other than that which comes from the sun.

Disease Testing and Initial Seedling Selection Work at the Houma Station During 1944

By Eaton M. Summers, Associate Pathologist, and and E. V. Abbott, Pathologist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

Continued progress was made in testing sugarcane seedlings for disease resistance and adaptability to Louisiana conditions in 1944. Somewhat fewer seedlings were propagated from true seed but the number of seedlings in advanced stages of preliminary testing was relatively much larger than in previous years (Table 1). This is directly reflected in the assigning of 156 new C. P. numbers as compared with the 75 assigned in 1943. The number of seedlings in advanced stages of testing will be even greater for 1945 and it is anticipated that in the neighborhood of 200 C. P. numbers will be assigned at harvest time.

Essential details of the testing procedure are familiar to most of our readers as they have been reviewed in previous articles in *"The Sugar Bulletin"*. Briefly, it consists of a rigorous testing and screening program of a very large number of seedlings. As a result, the very small percentage of these that receive C. P. numbers and are turned over to the agronomists for field testing are pretty likely to have no serious disease hazards unless they have shown exceptional promise in other respects. In addition, they generally have good records of sucrose, vigor, and habit of growth.

Susceptibility to one or more diseases has been the main factor in the failure of a long succession of varieties in Louisiana during the past 25 years. Each in turn has been replaced by resistant varieties that have lasted until their resistance broke down as the result of an accumulation of diseases or the appearance of new strains of one disease or another. Thus, above all else, it is essential that each variety be proven resistant to, or at least tolerant of, our common diseases (i.e., mosaic, chlorotic streak, root rot and red rot) before it is considered for agronomic testing. Failure to meet these requirements might eliminate a variety that proved promising in the field before such disease susceptibility asserted itself.

The general acceptance of C.P. 34/120 as a commercial variety had apparently solved the problem of replacing Co. 281 and, to some extent, C. P. 28/19, 29/320, and Co. 290, all of which have definite limitations from the disease standpoint. It now appears, however, that difficulties encountered in harvesting and milling C. P. 34/120 may limit its utilization.

The release of C. P. 36/105 should help the situation in many sections of the state. This should prove to be a good variety for mechanical harvesting and, so far as is known, for milling. It has consistently yielded well as a result of good tonnage and sucrose. It is resistant to both red rot and root rot. Traces of mosaic have been noted in the variety at 10 of the test fields and secondary increase plantations, and Mr. E. P. Munson of the American Sugar Cane League called our attention to an increase planting on one plantation with 2 percent infection. From this it appears that C. P. 36/105 is less resistant to mosaic than is C. P. 34/120, in which mosaic has been found on only one plantation. However, it is not believed that mosaic control will be a serious problem in C. P. 36/105.

The following C. P. varieties: 34/92, 34/115, 34/139, 36/55 are in advanced stages of agronomic testing and as a result, all have been increased to a considerable extent. Their disease ratings have been discussed in previous reports. C. P. 34/92, 34/115 and 36/55 are susceptible to red rot, but we have not observed any important reductions in stands caused by this disease in increase plantings of these varieties.

The varieties, C. P. 36/13, 36/19, and 36/183 were distributed to the secondary increase stations in 1944. C. P. 36/13 is resistant to red rot and has shown only a trace of mosaic. It appears to be moderately susceptible to root rot but has performed very well in the field under adverse conditions in heavy soil. Some chlorotic streak has been found in it. Seed cane of this variety has been observed to undergo very severe exposure to cold and drying out in the field without noticeable damage. C. P. 36/19 is susceptible to root rot, and has shown a trace of mosaic and chlorotic streak. C. P. 36/183 is likewise susceptible to root rot but no mosaic or chlorotic streak have been observed in it. It seems unlikely that the utilization of any of these 3 varieties will be endangered by disease susceptibility.

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TABLE 1—Summary of disease resistance tests of sugarcane varieties at the Houma Station during 1944.

Classification of Seedlings	No. examined in field	No. inoculated with mosiac	Number of Sucrose Analyses					Number replanted as		C. P numbers assigned
			C. P. candidates	Pre–C. P. candidates	Single stools	Controls	Totals	Pre–C. P. candidates	C. P. candidates	
'39 series and earlier	16	----	15	----	----	----	15	----	----	6
'40 series from Canal Point	116	----	108	----	----	7	115	----	----	21
'40 series from Houma	2519	----	586	1263	----	282	2131	----	317	103
'41 series from Canal Point	619	----	61	204	----	65	330	----	38	20
'41 series from Houma	1553	----	40	1146	----	142	1328	----	346	6
'42 series from Canal Point	429	----	----	133	----	49	180	----	55	----
'42 series from Houma	8404	----	----	----	1743	19	1762	978	----	----
'43 series from Canal Point	----	----	----	----	----	----	----	531	----	----
'43 series from Houma	7618	8460	----	----	----	----	----	----	----	----
Imported varieties	153	27	----	----	----	----	29	----	----	----
Agronomic selections	393	74	----	----	----	----	79	----	----	----
Totals	21,820	8,561	810	2,746	1,743	562	5,769	1,509	756	156

Report on Aconitic Acid Studies at Houma, La., Station

(Presented by R. T. Balch before the Contact Committee of The American Sugar Cane League of the U. S. A., Inc., at a meeting held on June 14, 1945, at Houma, Louisiana)

In response to your invitation to discuss work on Agricultural Chemistry being done at this Station by the Bureau of Agricultural and Industrial Chemistry, I have decided to review our study of aconitic acid. Although this study has not been the principal line of investigation during this war period, it was thought that the subject might be of most interest to you at this particular time.

Our investigations on aconitic acid at this Station have dealt primarily with a survey of the aconitic acid content of cane juices as influenced by certain cultural and varietal factors and of the distribution of aconitic acid in sugar cane and in factory products, for the purpose of discovering, if possible, potential commercial sources of this natural acid. A market for aconitic acid seems to be assured whenever it becomes available in commercial quantities, since it is useful in the field of plastics.

Aconitic Acid in Sugarcane

As you doubtless know, aconitic acid is the principal organic acid of sugarcane, aside from the amino acids. It is present, apparently, in both a free and combined condition in varying amounts and is widely distributed through the parts of the plant that are above ground. The function of the acid in the physiology of the plant has not been determined, but from various facts it would seem that it may act primarily as a stabilizer of the reaction of the juice in the various tissues of the plant. At least we find that the pH of normal cane juices is a fairly constant value regardless of the amount of mineral matter of a basic nature taken up by the plant and dissolved in the juice. In general, the total aconitic acid contained in cane juices parallels both the mineral matter and the titratable acidity, which is a measure of the free acid.

From this information, it would be expected that the aconitic acid content would vary widely in the different parts of the sugarcane plant. This was found to be true. The mature bottom joints of the stalk contain the least, while the immature top joints of the stalk contain the greatest quantity of the acid. The concentration of aconitic acid in the juice from immature joints has sometimes been found to exceed 1 gram per 100 ml. It was interesting to find that the green leaves attached to the immature joints also contain considerable amounts of aconitic acid. Juices from the leaf sheaths and from the leaf blades were found to contain, respectively, about 90% and 70% as much aconitic acid as the juice from that portion of the immature stalk to which the leaves were attached. This finding is of considerable importance because it indicates the possibility of utilizing the whole cane tops as a source of aconitic acid.

Since the titratable acidity of cane juices varies in different varieties, one would expect to find a difference in varieties with regard to their aconitic acid content. Information on this was obtained by analyzing crusher juices of from six to nine varieties of cane grown under commercial conditions in from three to seven locations. This scheme allowed a comparison to be made between different varieties in any one of the locations and between the same variety at different locations. The test plots were located in various sections of the sugar producing area, so it is believed that the results obtained are representative of the situation.

As regards varietal differences, it was very evident that Co. 290 cane was the heaviest producer of aconitic acid, since in every case but one the content of aconitic acid in crusher juices from this variety quite materially exceeded the values obtained from the other varieties. The average content of aconitic acid in the crusher juice of Co. 290 cane grown on six locations was 1.63% on Brix solids. The varieties that yielded crusher juices having the lowest aconitic (an unreleased variety) with values of 0.93%, 0.98%, and 0.85%, respectively. The remaining varieties might be placed in a single group, since the aconitic acid values were within a range of from 0.98% to 1.11% and there was no definite regularity about their relative positions within the group. These varieties were Co. 281, C. P. 29/116, C. P. 29/320, C. P. 35/243 and C P. 34/120.

The data obtained indicate that cultural factors, particularly soil conditions, can exert a pronounced influence on the aconitic acid content of cane juices. Outstanding in this connection is a comparison of six varieties of cane grown in the Erath area with the same varieties grown in other areas of the sugar district. Crusher juice from the cane grown in the Erath area contained an average of only 0.28% aconitic acid on Brix solids, while the average for the other areas was 1.30%. The soils in the Cut-Off area exerted a similar influence but not nearly so pronounced. Unless subsequent findings are to the contrary, we can say that cane products from the Erath area would be very unsatisfactory sources of aconitic acid and that, considering the commercial varieties as a group, there is little choice among the other areas. However, in certain areas Co. 290 cane is grown more extensively than other varieties and this might be an important consideration in any attempt toward commercial recovery of aconitic acid, especially from factory products.

Aconitic Acid in Factory Products

In the sugar factory, raw juices contain from about 0.15% to 0.30% of aconitic acid on weight of juice. The acid is present in both a free and combined form. Ordinary clarification of the juices with lime apparently causes a loss of some of the aconitic acid. The loss is around 10% of the total quantity present. The remainder is concentrated in the sirup and is further concentrated in the molasses as sugar is removed by crystallization. If the concentration of aconitic acid is relatively high and the clarification has been conducted at a high pH value, the acid may be precipitated in the vacuum pan as a calcium salt in sufficiently large crystals to appear as false grain. In view of the fact that aconitic acid is a substantial constituent of the sludge that separates from molasses upon dilution, it may be concluded that it usually crystallizes to some extent from vacuum pan liquors, but is not detected because of the fineness of the crystals. Apparently, some of the aconitic acid salt is retained by the sugar crystals, for two samples of mixed "A" and "B" sugars showed an aconitic acid content of 0.18%. This is larger than would be possible if the aconitic acid were simply a soluble constituent of the molasses film on the crystals. It was interesting to find that sludges obtained by centrifuging double-diluted black strap molasses, contained,

after being washed relatively free of water-soluble matter, from 16% to 35% aconitic acid.

The total aconitic acid in blackstrap molasses varies to a marked extent, judging from the results obtained on twelve samples received from nine raw-sugar factories. The variation was from 0.96% to 6.13% based on Brix solids. The low value was found in a sample of molasses from the Erath area which would seem to reflect the low aconitic acid values of the cane grown in this area. However, this sample may have been abnormal, since it was a hot-room product and had been in storage for some time before sampling. We do not have any information as to whether or not the aconitic acid content is altered under these conditions. The aconitic acid in the other eleven samples ranged from 2.43% to 6.13% and averaged 4.01%.

Possible Recovery of Aconitic Acid

From this and other studies, it would seem that aconitic acid might be recovered from either field or factory sources. In the factory, the logical source is the molasses. You have already become acquainted with the work dealing with the recovery of aconitic acid from 2nd molasses done last season at the factory of the Iberia Cooperative by Messrs. Ventre and Furse of the Bureau of Agricultural and Industrial Chemistry staff. In view of the still higher content of aconitic acid in blackstrap molasses, this product may be a better source, but has not yet been investigated on a pilot-plant scale.

In the field, green cane tops would theoretically make a good source of aconitic acid. However, from a practical viewpoint, at least under present practices, collection of the tops and processing them during the cane-grinding season would present difficulties that might be unsurmountable.

The idea has been expressed that a crop could be grown for aconitic acid and whatever by-products might also be derived from the crop, thus providing some work for the factories during their idle season. Specifications for the crop call for a cane that is a luxuriant grower, one that gives a good yield of aconitic acid and residue per acre per season and preferably one that can be harvested several times during the season from a single planting in order to conserve acreage.

This idea was evaluated in a preliminary way by making some observations at and calculations based upon a very luxuriant sugarcane of no value as a sugar producer. The samples taken for study were from a row of the cane that had been planted about eight years previously and had since received neither cultivation nor fertilization. Two cuttings were made, the first on May 9 and the second on July 10, 1944, at a time when the older stalks were first showing one or two mature joints. Further cuttings of the crop were not made because the cane failed to recover sufficiently well. Whether this condition could have been avoided by proper cultivation and fertilization was not determined. The green cane with all the leaves comprising the harvested samples was weighed, ground finely and pressed in a hydraulic press. The juice obtained was analyzed for aconitic acid and solids (by refractometer). The average concentration of aconitic acid in the juice from the two cuttings was approximately 0.6% on sample or 13% on refractometer solids. The first cutting yielded 9.4 pounds of green matter per foot of row and the second cutting, 11.3 pounds, both making a total of 20.7 pounds. It is, of course, questionable how accurate a calculation based upon these data, in terms of tons of green matter per acre, might be, but such a calculation was made. It was assumed that the crop could be produced in rows 4-feet apart since the cane would never get so tall that it would seriously interfere with adjoining rows. A result of 112 tons of green matter per acre per season (two cuttings) was obtained. Assuming, further, a juice extraction of 76% and an aconitic acid recovery of 80% of that in the juice, a yield of aconitic acid of 800 pounds per care per season is indicated. Presumably, the residue could be used for a number of purposes; because of its succulent character it possibly could be used as a feed-stuff either by siloing for later direct feeding or by drying. On the air-dry basis, a yield of at least 20 tons of material would be obtained from the crop per acre per season. Placing a value of 20 cents per pound on the aconitic acid and $5 a ton on the dried residue, one arrives at a gross return of $260 per acre per season. It is believed that the assumptions made in connection with these calculations are reasonably conservative, and that the calculations make the suggestion of a special cane crop for aconitic acid worthy of further study.

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Direct Consumption Sugar From Raw Cane Juice

By W. A. Blann

American Cyanamid and Chemical Corporation, New York, N. Y.

During the 1944 sugar cane season an experimental pilot plant was operated in the Audubon Sugar Factory for the purification of sugar cane juices by a recently developed process incorporating ion exchange resins. The method of purifying the sugar cane juices by the application of ion exchange treatment is a radical departure from methods heretofore used.

It is generally known that ion exchange treatment removes minerals from water solutions and is usually considered a demineralization process. When sugar cane juices are deionized by this new process non-sugar solids other than minerals are also removed and there results a highly purified sugar solution consisting principally of sucrose, dextrose, and levulose. The elimination of non-sugars from juices results in sirups substantially higher in purity than those obtained by standard sugar house practice or by earlier methods of ion exchange treatment. When these sirups are exhausted by crystallization of sucrose to the same degree common to present sugar manufacturing prac-

tices, an increased yield of sugar results.

One of the outstanding features of the process is that the ion exchange treatment is not superimposed upon the usual methods of defecation. It is in itself a process for the production of juice from which high purity direct consumption sugars and high grade edible molasses can be obtained.

The following data is indicative of the products obtained by means of this new ion exchange process.

TYPICAL ANALYSES OF ION EXCHANGE

	Raw Juice	*Ion Exchange Treated Juice*	*Final Molasses*
Purity (Clerget)			
% Sucrose	76.75	88.4	39.01*
Invert %	8.44	9.9	49.6
Non-Sugar Solids %	14.81	1.7	11.4
Ash %	3.14	0.064	0.8

*Purity by direct polarization is 26.7%.

It is well known that the cane varieties grown for the production of sugar on the heavy dark soils of Louisiana produce sirups of darker color and stronger flavor than in other localities where sirup is produced from selected cane varieties grown on light sandy soils. Sugar cane juices treated by ion exchange are purified to the extent that they may be made into light colored mildly flavored sirups suitable for table use directly or for blending with the more strongly flavored sirups normally produced in Louisiana. By this method it is possible to produce a standardized uniformly high quality sirup.

The quality of the products produced, as well as the adaptability of the process to Louisiana conditions was decidedly favorable, and it is planned to undertake industrial exploitation in the immediate future.—*From Louisiana State University Engineering Experiment Station News.*

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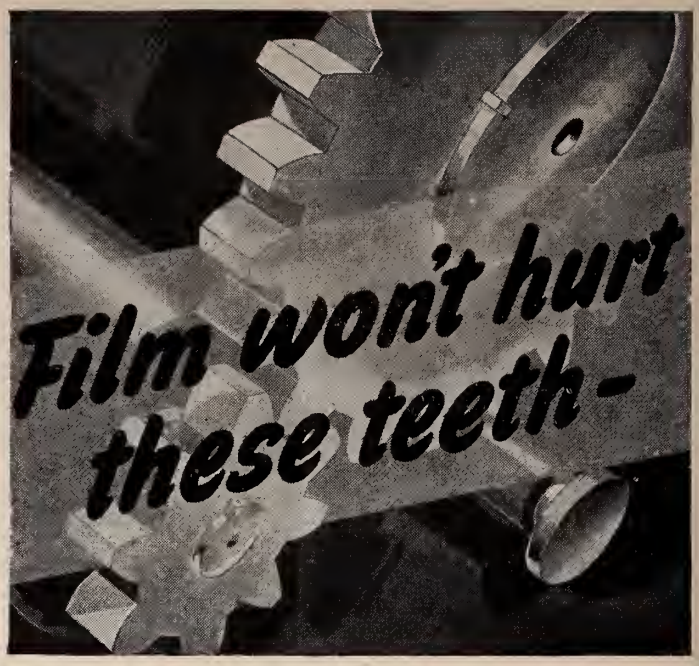

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Vol. 23 NEW ORLEANS, LA., SEPTEMBER 1, 1945 No. 23

U. S. Department of Agriculture Re-Organization

By C. J. Bourg

The promised re-oragnization of the U. S. Department of Agriculture has been brought about. It is a fulfillment of another of the recommendations of the War Food Investigating Committee to the extent that a Sugar Co-Ordinator has been selected.

In the re-organization, the U. S. Department of Agriculture has taken over all of the functions of the War Food Administration. Under-Secretary J. B. Hutson has been designated as Administrator of Production and Marketing, with supervision over the Commodity Branches. The Sugar Branch will have as its Director, Earl B. Wilson, who has been in charge of the Sugar Division of the CCC. The Sugar Branch will carry out the functions of administering the Sugar Act and also the functions connected with the production, marketing and distribution of sugar, including the purchase of sugar by the Government other than the Armed Forces.

Earl Wilson has had many years of experience in the sugar business and is familiar with all of the business angles. In addition, he has been serving with the CCC during the war, giving him the opportunity to familiarize himself with Government procedure. The combination is a happy one and undoubtedly insures a successful term of office In his relations with the domestic sugar industry, Mr. Wilson has demonstrated a broad understanding of the problems and a willingness to give full consideration. He is charged with the considerable task of restoring the U. S. market to a better relationship between supply and demand. We all know that there is no hope of an immediate cure for the sugar shortage. It will require the transition of time and crop production covering the full year of 1946, and possibly beyond. Under the leadership of Mr. Wilson, and with the cooperation of all producers and areas, the public can anticipate with confidence that the program will eventually be successful.

Secretary Clinton P. Anderson has given evidence of backing up his public statements with official action. His announcement of the 1946 grower program as early as August 1, 1945, is an encouraging demonstration of his official attitude and his performance. The appointment of Earl B. Wilson can be considered as another step in the program of Secretary Anderson to bring order out of the chaotic conditions which have existed in sugar.

We compliment the Secretary upon his appointment and we offer to the new Director of the Sugar Branch the full cooperation of our area and producers of sugarcane and sugar engaged in the Louisiana industry.

Prisoners of War Labor

(*Official Release of the War Manpower Commission*)

Efforts of the War Manpower Commission *to halt the use of prisoners of war in non-agricultural jobs* have been accelerated by the sudden conclusion of the Japanese war, Paul V. McNutt, chairman of WMC, announced today.

Mr. McNutt said that field offices of the commission and offices of the U. S. Employment Service throughout the nation have been re-examining certifications authorizing the employment of prisoners of war to make certain that none is employed where American workers are available. Some 64,000, out of a total of approximately 140,000 allocated by the War

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Department for work in agricultural and non-agricultural (food processing and industrial) employment where needed, are now working in food processing plants, foundries, doing forestry and logging work and helping out in other industries where critical labor shortages existed and American labor could not be found.

"Halting of war production, while leaving us with several serious labor recruitment problems connected with the tasks of reconversion, would make it possible soon to discontinue the use of prisoner of war labor," Mr. McNutt said.

Mr. McNutt said that prisoners of war, who are now performing an average of 875,000 man-days of work a month in various non-agricultural fields, are doing hard-to-fill jobs. With the discontinuance of war production, however, American workers are becoming available for this employment. The War Department, therefore, is going ahead with a repatriation program which calls for the gradual closing down of prisoner of war camps, and the shipping out of these men as rapidly as possible. No dependence can be placed by employers on the availability of this labor after the end of the year and it appears likely, now that the Japanese war is over, that a much earlier deadline may be set.

Practically every state has prisoner of war camps supplying workers for food processing, forestry and logging and other types of non-agricultural employment. Indicative of the use being made of this type of labor is the following table, which gives a breakdown by Army Service Commands and states of the man-days of contract non-agricultural work done by prisoners during June, the latest month for which complete records are available:

Service Command	*Total Man-Days*
First	35,601
Maine	30,029
Massachusetts	262
New Hampshire	4,310
Second	105,667
Delaware	35,423
New Jersey	29,337
New York	40,907
Third	171,009
Maryland	54,097
Pennsylvania	43,159
Virginia	73,753
Fourth	261,273
Alabama	52,023
Florida	16,232
Georgia	53,111
Mississippi	26,161
North Carolina	49,666
South Carolina	50,061
Tennessee	14,019
Fifth	80,297
Indiana	45,076
Ohio	32,656
West Virginia	2,565

Command Service	*Man-Days Total*
Sixth	77,531
Illinois	29,747
Michigan	31,371
Wisconsin	16,413
Seventh	38,720
Colorado	180
Iowa	7,513
Kansas	2,181
Minnesota	8,439
Missouri	2,500
Nebraska	5,338
Wyoming	6,569
Eighth	98,711
Arkansas	22,832
Louisiana	20,060
New Mexico	573
Oklahoma	2,840
Texas	52,388
Ninth	6,201
Arizona	1,752
California	1,281
Idaho	380
Oregon	2,328
Utah	430
Washington	32

Harvesting Wages Set

(*Official Release*)

Chapter VIII—Sugar Agency

Part 802—Sugar Determinations

Determination of Fair and Reasonable Wage Rates for Persons Employed in Harvesting Sugarcane in Louisiana during September 1, 1945 to June 30, 1946

Pursuant to section 301(b) of the Sugar Act, as amended, the following determination is hereby issued:

802.24*u*. *Fair and reasonable wage rates for harvesting of sugarcane in Louisiana during the period September* 1, 1945 *to June* 30, 1946. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the harvesting of sugarcane in Louisiana during the period from September 1, 1945 to June 30, 1946, if all persons employed on the farm during that period in the harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates as follows:

Field Day September 13th

The annual Louisiana Sugar Planters' Field Day will be held at Louisiana State University on Thursday, September 13, 1945. Mr. W. G. Taggart, Director, has advised that the program this year will consist of a visit to the fields in the morning, and an indoors get-together in the afternoon.

The Field Day meetings are always well attended and all those interested in the Louisiana sugar industry are invited to be present again this year.

(a) the wage rates agreed upon between the producer and the laborer but in no case less than the rates prescribed under paragraphs (b), (c) and (d).

(b) Time rates for adult males and adult females.

		Per Day of 9 Hours
(1)	Cutting, topping, stripping—adult males	$2.85
	adult females	2.30
(2)	Loading	3.45
(3)	Cutting and loading	3.05
(4)	Tractor drivers and truck drivers	3.55
(5)	Teamsters	3.35
(6)	Hoist Operators	3.05
(7)	Any other harvesting operations not connected with mechanical loading or mechanical harvesting: adult males	2.40
	adult females	1.90
	Operations connected with mechanical loading or mechanical harvesting:	
(8)	Operators of mechanical loading or harvesting equipment	3.80
(9)	Pilers	3.05
(10)	Grabmen, spotters, ropemen	3.45
(11)	Scrappers and other operations connected with mechanical loading or mechanical harvesting	2.85

For a working day longer or shorter than 9 hours, the rate shall be in proportion to the applicable rate prescribed above.

(c) Time rates for workers 14 to 16 years of age.

For workers between the ages of 14 and 16 years, the rate per day of 8 hours (maximum hours per day for such workers) shall be not less than three-fourths of the applicable rate established under paragraph (b) for adult male workers for a 9 hour day. For a working day shorter than 8 hours, the rate shall be in proportion.

(d) Piece rates for adult, males, adult females, or workers 14 to 16 years of age.

		Rate per Ton *Large Barrel* Varieties*	*Small Barrel Varieties*
(1)	Cutting top and bottom and stripping	$1.24	$1.44
(2)	Cutting top and bottom	.96	1.05
(3)	Loading	.29	.38
(4)	(1) and (3) combined	1.53	1.82
(5)	(2) and (3) combined	1.25	1.43

(6) The piece rate for any operation not specified above shall be that agreed upon between the producer and the laborer; provided, however, that the earnings for the time involved shall be not less than the applicable time rate specified in paragraphs (b) or (c); and provided further, that such minimum earnings shall not apply to prisoners of war but they shall be paid at the same piece rates as other laborers.

*Large barrel varieties; CO 290; CP 29-103; CP 29-116; 31-291; 32-243.

(e) General provisions.

(1) In addition to the foregoing, the producer shall furnish to the laborer without charge the customary perquisites, such as a habitable house, medical attention and other customary incidentals.

(2) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined herein.

Issued this 13th day of August 1945.

CLINTON P. ANDERSON
Secretary of Agriculture

Farming Practices For 1945

(*Official Release*)

Chapter VIII—Sugar Agency

Part 802—Sugar Determinations

Mainland Sugarcane Farming Practices for the 1945 *and Subsequent Crop Years*

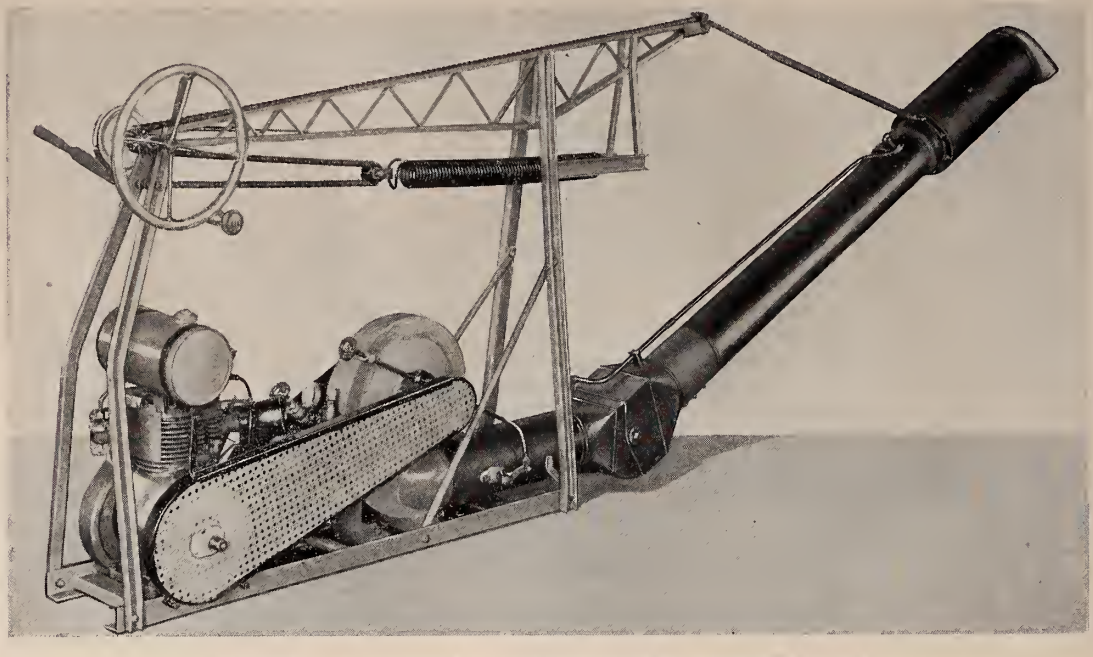
Pursuant to the provisions of section 301 (e) of the Sugar Act of 1937, as amended, the following determination is hereby issued:

802.23g. Farming practices in connection with the production of sugarcane during the 1945 and subsequent crop years—(a) Conservation requirements. The requirements of section 301 (e) of the Sugar Act of 1937, as amended, shall be deemed to have been fulfilled with respect to any sugarcane farm in the Mainland cane sugar area for the 1945 and each subsequent crop if there is carried out during the calendar year in which the harvesting of the crop begins, on land on the farm which is adapted to the

(Continued on page 206)

THE WOOLERY LINE C

THE WOOLERY JUNIOR WEED BURNER, VARIOUSLY MOUNTED AS



MODEL "A" WOOLERY JUNIOR WEED BURNER UNIT

The Model "A" shown above burns a swath 5 feet wide and has a wide range of adaptability. It m be mounted on a Railroad push car to be towed by a motor car or it can be mounted on a truck, tr tor or trailer car and used for burning along highways, fences, canal banks, irrigation ditches, etc

The above picture shows the Model "A" mounted on circular track bolted to truck body floor straight-away burning. By this arrangement burner unit can be swung thru an arc of 180°.

WOOLERY MACHINE CO.

PIONEER INVENTORS AND MANUFA

UNIOR WEED BURNERS

D HERE, PROVIDES ADEQUATE HELP FOR THE SUGARCANE GROWER.

his picture with the same mounting as shown in Figure 2 shows the burner unit set at an angle f 180° with a special burner head that also burns a swath 5 feet wide adapted for ditch and ditch ank burning and will burn to a distance of 12 feet from center of track.

e Model "D" is a self-propelled unit built an angle steel frame and mounted on a two-eel chassis with either steel or rubber tires. s especially adapted for flame cultivation ween crop rows on sugarcane and pineapple ntations. Shields are provided on each side burner hood and are adjustable. They can swung in and out, raised and lowered, so as give positive control of flame to prevent in-y to crop plant. The entire space up to six between crop rows can be flamed by making trip.

use is not restricted to weed burning alone, it provides an efficient means for dusting on crops, spraying fruit orchards, potatoes ny other crops that come within this category.

Minneapolis, Minn.

OPEN FLAME TYPE WEED BURNERS

production of sugarcane for sugar, an acreage of approved conservation practices equal to not less than 15 per cent of the acreage of sugarcane for sugar growing on the farm for harvest during such calendar year.

(b) Approved practices. Each of the following shall be counted as one acre of conservation practices:

(1) Seeding one acre of winter legumes in the fall.

(2) Turning or disking under one acre of a satisfactory growth of summer legumes grown alone.

(3) Turning or disking under one acre of a satisfactory growth of winter legumes seeded in the fall of the preceding year.

(4) Turning or disking under one acre of a satisfactory growth of sorghum as a green manure crop.

(5) Turning or disking under two acres of a good stand and good growth of summer legumes (excluding peanuts, lespedeza and summer legumes used as truck crops) interplanted or grown in combination with row crops such as corn; Provided, the summer legumes occupy at least one-third of the land.

(6) Turning or disking under two acres of a good cover and growth (except seed or seed heads) of summer legumes or sorghum.

(7) Applying 48 pounds of available phosphoric acid ($P_2 O_5$) to, or in connection with, a full seeding of winter legumes.

(8) Applying 500 pounds of basic slag (rock phosphate or colloidal phosphate in Florida) to, or in connection with, a full seeding of winter legumes.

(9) Removing 25 cubic yards of earth in the construction, enlargement or cleaning out of lateral ditches and lead canals. (Applicable in Louisiana only.)

(10) Carrying out on one and one-half acres of land in Florida, the top soil of which is combustible (determined as such by the State AAA Committee) and from which no crop classified as soil-depleting in ACP-1941, 1941 Agricultural Conservation Program Bulletin, as amended, is harvested and on which adequate facilities (ditches, pumps and necessary equipment) have been maintained (whether constructed in the current calendar year or earlier) for flooding the land during the fire hazard season as a protection against the destruction of such top soil by fire, the practices specified in paragraphs B, C, D and E of Amendment 3 to Southern Region Bulletin 101, issued June 11, 1937, for protecting the soil against fire, aainst adequate drainage and preventing soil oxidation and subsidence; Provided, however, that there shall be carried out on such land on the farm such other practices as are recommended for the farm by the County AAA Committee, and approved by the State AAA Committee, for protecting the soil assuring adequate drainage and preventing soil oxida- soil oxidation and subsidence, and otherwise preserving and improving the fertility of the soil and preventing soil erosion, such practices to be consistent with reasonable standards of the farming community in which the land is located.

(c) Standards of performance. The conservation practices shall be carried out in accordance with farming methods commonly used in the community in which the farm is located and in accordance with specifications approved by the Director of the Southern Division of the Agricultural Adjustment Agency.

Issued this 10th day of July 1945.

CLINTON P. ANDERSON
Secretary of Agriculture

Note: "Sugar Agency"—formerly War Food Administration (Sugar Determinations)

Sugar Statistics For First 6 Months of 1945

(*Official Release*)

Washington, August 11, 1945

The Sugar Branch announced today that distribution of sugar by primary distributors in the United States during January-June 1945 as compared with the corresponding period of 1944 was as follows:

	1945	1944
	(short tons, raw value)	
Refiners' raw sugar (Table 1)	2,995	4,771
Refiners' refined sugar (Table 2)	2,791,366	2,623,632
Beet Sugar Processors (Table 2)	489,580	508,527
Importers' direct-consumption sugar (Table 3)	209,015	220,466
Mainland Cane Mills' direct-consumption sugar (Table 4)	47,250	76,177
Total	3,540,206	3,433,573
Deliveries for export[1]	204,194	229,920
Distribution for consumption in Continental United States	3,336,012	3,203,653

The distribution of sugar for local consumption in Puerto Rico during January-June, 1945, was 66,518 tons and for the Territory of Hawaii, 40,633 tons (Table 5).

Stocks of sugar on hand June 30 were as follows:

	1945	1944
	(short tons, raw value)	
Refiners' raw[2]	228,407	546,113
Refiners' refined	143,311	265,001
Beet sugar processors	287,672	371,118
Importers' direct-consumption sugar	10,092	83,268
Mainland cane factories	14,538	21,322
Total	684,020	1,286,822

[1] Includes deliveries for liberated areas and lend-lease as well as for military relief, but excludes usage by U. S. Expeditionary Forces.

[2] Includes raw sugar not reported by refiners in Table 1 as of June 30, 1945 41,337 tons; 1944, 86,501 tons.

Sugar Statistical Reports

Vol. 12, No. 6—January-June, 1945

TABLE 1

Raw Sugar: Refiners' stocks, receipts, meltings, and deliveries for direct-consumption for January-June 1945
(short tons, raw value)

Source of Supply	Stocks Jan. 1, 1945	Receipts	Meltings	Deliveries for direct consumption	Stocks on June 30, 1945
Cuba	151,863	1,969,684	1,997,676	2,243	121,628
Hawaii	76,100	320,698	387,352	177	9,269
Puerto Rico	21,402	290,559	270,324	131	41,506
Philippines	84	0	0	84	0
Continental Cane	79,452	117,626	186,012	360	10,706
Virgin Islands	0	3,908	0	0	3,908
Other Countries	2,247	41,088	43,335	0	0
Miscellaneous (Sweepings, etc.)	78	60	85	0	53
Total	331,226	2,743,623	2,884,784	2,995	187,070

Compiled from reports submitted by sugar refiners on Form SS-15A.

TABLE 2

Stocks, production, and deliveries of cane and beet sugar by United States refiners and Processors, January-June 1945
(short tons, raw value)

	Refiners[1]	Domestic Beet Factories
Stocks of refined, Jan. 1, 1945	63,093	747,739
Production	2,871,584	29,513
Deliveries	2,791,366	489,580[2]
Stocks of refined, June 30, 1945	143,311	287,672

Compiled from reports submitted on Forms SS-16A and SS-11C by the sugar refineries and beet sugar factories.

[1] The refineries' figures are converted to raw value by using the factor 1.076180 which is the ratio of meltings of raw sugar to refined sugar produced during the years 1943 and 1944. This factor is under further consideration.

[2] Larger than actual deliveries by a small amount representing losses in reprocessing, etc.

TABLE 3

Stocks, receipts, and deliveries of direct-consumption sugar from specified areas, January-June 1945
(short tons, raw value)

Source of Supply	Stocks on Jan. 1, 1945	Receipts	Deliveries or usage	Stocks on June 30, 1945
Cuba	7,705	153,457	157,388	3,774
Puerto Rico	0	57,945	51,627	6,318
Total	7,705	211,402	209,015	10,092

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Form SS-15B and SS-3.

TABLE 4

Mainland cane mills' stocks, production and deliveries, January-June 1945
(short tons, raw value)

Stocks on January 1, 1945	Production	DELIVERIES: For direct consumption	DELIVERIES: For further processing	Stocks on June 30, 1945
77,327	76,495	47,250	92,034	14,538

TABLE 5

Distribution of sugar for local consumption in Puerto Rico and the Territory of Hawaii, January-June 1945
(short tons, raw value)

Puerto Rico	66,518
Hawaii	40,633

Florida Wage Hearing Held

(From Hal Leyshon and Associates)

Increased production costs and inefficiency of labor are combining to bring about a reduction in sugar production at a time when the nation is facing its worst shortage, Everglades cane growers testified at a hearing called at Clewiston, Fla., by the U. S. Department of Agriculture August 16, to assist in determination of wage rates and crop prices for the 1945-46 season.

It was the unanimous recommendation of the growers that established wage rates remain the same for the coming season.

J. E. Beardsley, independent grower of Clewiston, read into the record a telegram he dispatched to Washington earlier in the year urging that the Sugar Agency and Commodity Credit Corporation, pay more money per ton of cane to growers.

"Without exception growers agree proceeds this season above harvesting will not pay for replacement planting in fall, cultivation and fertilization of next year's crop. Notwithstanding promised incentive payments for 1945 crop, several growers will probably quit at close of this harvest season anticipating further shortage and increased cost of labor, fertilization, and equipment for next season," the telegram stated.

He reiterated the growers' problems in asking at the hearing that wage rates remain the same.

Clarence R. Bitting, president of the United States Sugar Corp., largest single sugar cane producer in continental United States, declared:

"It is axiomatic that the basic needs of the people cannot long be met when the proceeds of produce are less than the cost of production."

He pointed to the gap between the low ceiling price on sugar and the high costs of production which the government is endeavoring to partially close through incentive payments.

"To continue to fill the gap from the federal treasury is economically unsound," he said. "An increase of but one cent per pound in the ceiling price of raw sugar would effectively close the adverse gap between cost and selling price for the efficient producers. It would encourage efficient production and the housewife would never notice it in her annual food budget."

He said he was not prepared to advocate abandonment of ceiling prices at this time, but "the ceiling price should be sufficient to cover the cost of production by efficient producers and also yield them a reasonable profit. This, existing ceiling prices most assuredly do not do."

The fact that the government has increased its incentive payments for the 1945-46 season is proof that the present ceiling price on sugar is not correct. Bitting said. He added that while the United States Sugar Corporation throughout its history has paid wages in excess of the determination set by the secretary of agriculture, the government should stop continually moving up the wage rates each year because of the cumulative effect.

"We cannot at this time foresee any reduction in cost of producing cane. In fact, we may be faced with substantial increases in the cost of fertilizers, machinery, equipment, repair parts and other similar items, so that it is extremely doubtful if the incentive payments announced for the 1945-46 and 1946-47 crop will cover increased costs beyond the control of the grower and which are not covered in price increases."

In view of the uncertainties facing the nation he recommended that no change be made in wage determinations and that cane prices paid to independent growers remain the same. He praised the department of agriculture and the state extension service for their assistance in securing labor.

C. R. Oviatt of the payment section, sugar branch USDA, presided at the meeting, with W. S. Stevenson, of the labor unit, and H. G. Clayton, Florida representative of the agriculture adjustment administration, also present at the meeting, which was held in the Clewiston high school.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against Foreign Competition

Vol. 23 NEW ORLEANS, LA., SEPTEMBER 15, 1945 No. 24

Announcing The

TWENTY-THIRD ANNUAL MEETING

of the

AMERICAN SUGAR CANE LEAGUE

of the

U. S. A., Inc.

Thursday, September 27th, 1945

ROOM 317, WHITNEY BUILDING

New Orleans, La.

Meeting Convenes at 1:30 P. M.

At this meeting there will be an election of Officers and Members of the Executive Committee to serve during the ensuing year.

All Members of the League Will Please Consider This as an Official Notice To Attend

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12
MARCEL J. VOORHIES, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

in which are consolidated

The Louisiana Sugar Planters' Assn.
The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
Subscription Price, 50 Cents Per Year.

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New Sugar Set-Up in USDA

By C. J. Bourg

Upon assuming his duties as the newly appointed Director of the Sugar Branch, USDA, Mr. Earl B. Wilson decided to distribute authority in connection with the several functions of the Sugar Branch. As he has been given authority over sugar programs in the reorganization of the Department of Agriculture, Mr. Wilson is carrying out the policy of appointing office chiefs with definite responsibilities. Mr. Wilson will supervise and co-ordinate the sugar programs and the operating staff chosen and appointed will be:

Earl B. Wilson, Director
A. A. Greenwood, Assistant to the Director.
Joshua Bernhardt, Sugar Specialist.
W. L. Petrikin, Marketing Consultant.

Purchase and Price Support Division
James H. Marshall, Chief.
Charles W. Fowler, Assistant Chief.

Sugar Act Division
C. M. Nicholson, Chief.
O. R. Oviatt, Assistant Chief.

Distribution Division
Earl T. MacHardy, Chief.
E. J. Skrod, Assistant Chief.

Program Analysis and Statistics Division
A. S. Nemir, Chief.
Jessie L. Carter, Assistant Chief.

Operations Division, New York
W. F. Oliver, Chief
H. Lurie, Assistant Chief.

WPB Relinquishes Controls

By C. J. Bourg

The WPB Priorities System which we have all become used to during the war period is being abandoned as of September 30, 1945. The WPB has removed controls affecting the sugar industry, such as:

Building Construction Projects,
Processing Equipment,
Construction Machinery,
Maintenance and Repair Material and Equipment,
Farm Equipment,
Automotive Trucks,
All Containers, except Textile Bags.

As a substitute for the old Priorities System, military requirements are being rated MM. Civilian requirements which qualify will be rated CC under Priorities Regulation 38 (copies obtainable at the New Orleans office of WPB). WPB has indicated that they will be very strict in the issuance of these ratings.

What Priorities Regulation 28 does:

"As a result of victory over Japan, military procurement has been drastically reduced. The supply of materials for non-military use is expected to increase rapidly so as to be generally adequate to meet all demands. There is consequently no further need for general priorities assistance for essential non-military needs, and WPB has announced in Priorities Regulation 29 the termination of AA ratings and the Controlled Materials Plan at the end of September. It is WPB's general policy not to grant further priorities assistance for non-military purposes. How-

ever, WPB is introducing a new non-extendible CC rating for limited priorities assistance, where required in individual cases to assist reconversion or insure the continued fulfillment of essential civilian or export needs. This includes preference ratings for all purposes other than military procurement including production, construction, capital equipment, maintenance, repair, operating supplies and export materials. This regulation explains the condition under which WPB will assign the CC rating. * * *

"It is the general policy of the WPB not to grant further priorities assistance for non-military purposes. However, the WPB may in limited cases grant CC preference ratings for specific items and quantities of materials or equipment under the following conditions: (1) The applicant is not able, without preference rating assistance, to get the item in the minimum quantity and on the latest date practicable, and (2) the item is required for at least one of the following reasons:

(i) It is a "bottleneck item", a great majority of materials being obtainable without priorities assistance, and it is needed to maintain or begin operations at the minimum economic rate or to complete construction required for reconversion or other essential needs, or

(ii) The item is needed to prevent a delay in the completion on time of military production or construction, or

(iii) The item is needed to sustain or increase production of an item or a service which is in such *tight supply* that it is a serious threat to the ecoomy, or

(iv) The item is needed to eliminate hazard to life, health or safety of a large number of people, or to maintain essential public or other community services, or

(v) The item is needed in an emergency to remedy an actual or imminent breakdown or to replace an item which has been destroyed by flood, fire, tornado, or other Act of God, or

(vi) Where for other reasons, failure to obtain delivery of the item would result in unreasonable and exceptional hardship.

"Special consideration will be given to the needs of small business. * * * "

The administration for the issuing of these ratings will be in the WPB field offices (New Orleans in the case of Louisiana) to the extent of $5,000 per item, with a total not to exceed $25,000 on any one application. Proper form to be used is WPB Form 541-A (revised). Applications for larger amounts will be processed in Washington and referred to the Materials and Equipment Branch, Production and Marketing Administration of the USDA, for concurrence or dissent. Sufficient personnel in the USDA will be maintained to assist all food branches. The Sugar Branch will continue to aid the industry with any priority or material problems that may arise.

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Minutes of the Joint Meeting of the Contact Committee and the Industrial Committee of the American Sugar Cane League

At 10:00 a. m., August 9, the Contact Committee and the Industrial Committee of the American Sugar Cane League held a joint session. The following were present:

Contact Committee
Stephen C. Munson, Chairman
George L. Billeaud
Alfred A. Thibaut
C. A. O'Brien
Bronier Thibaut
E. A. Maier
Horace Nelson
F. A. Graugnard, Jr.
L. C. Bourgeoise, Jr.

Industrial Committee
A. G. Keller
M. V. Yarbrough
Irvin Legendre
James Ethridge

Houma Station
Eaton M. Summers
E. K. Bynum
Lester Davidson
Leon Carpentier

Experiment Station
W. G. Taggart
C. B. Gouaux
E. C. Simon
I. L. Forbes
C. W. Edgerton
S. F. Simmons
A. L. Dugas
P. H. Dunckelman
P. J. Mills
D. C. Bain

Visitors
Ed. Munson
P. M. Horton
M. C. Schwartz
Carl W. Stewart
L. J. LaSalle
Marcel J. Voorhies
Jesse Coates
J. B. Garrett
R. T. Gibbens, Jr.

Mr. Munson, Chairman, called the meeting to order and asked Mr. J. Norman Efferson to review the report by him and Wm. H. Alexander, titled "Preliminary Report on the Financial Results of the Operation of Raw Sugar Mills". This report had been mimeographed and mailed to members of the Contact Committee previously.

Mr. Efferson stated that the information in the report which has been used most is that shown on the charts at the end of the paper. He also gave a brief summary of several things which have been done on cost studies since the report was mimeographed. Analyses were made in December and January and a questionnaire was sent out in March, and from these further data have been compiled.

An analysis was made of what would happen if wage rates were increased in operation of the sugar mills.

An analysis was made on how much the cost of producing sugar has increased since 1941. General overhead has increased 3%; the cost of buying cane has increased 28%; other costs such as hauling, etc., have remained exactly the same—indicating increased efficiency. There has been a total cost increase of 25 per cent and an income increase of 9 per cent.

Then there was an analysis made of six high-income mills—those having an income of $20,000 or more, and of 23 mills with an income of less than $20,000. It was found that more than 50 per cent of the cane was ground at a loss of 27 cents per ton. Mr. Efferson estimated that 72 per cent of last year's grind was involved in this analysis.

Mr. C. B. Gouaux reviewed his report on "Sugar Cane Test Fields—Season of 1944." This report also was mimeographed and mailed to the members of the Committee several months ago. Attention was called to C.P. 33/224, which he estimated would yield 18-20 tons on black land. The question was raised as to why no first stubble at Youngsville was included in the

test, and Mr. Gouaux replied that it was caught in the freeze and so badly affected that it was not considered worthwhile to get data on it.

Dr. Edgerton discussed briefly the work done during the past year on hot water treatment and red rot, and the work, not as yet reported, on alligator weed eradication. He stated that there would probably be a report on the alligator weed problem before the Legislature meets next year. He called attention to the fact that no work had been done on the root rot of sugarcane on account of lack of manpower, although it is still a very important problem and will be continued sometime in the future. Then he called on Mr. Dunckelman to review briefly the hot water treatment work which was begun four years ago and which will be terminated when the present crop is harvested.

Mr. Dunckelman summarized the arrangement of the tests and mentioned several facts which seem significant. The variety C.P. 29/320 has shown average increases of three or four tons in the September to October and November plantings. No significant increases have been observed in the August plantings. Possibly that is because the cane is tender at this time and subjecting it to 52° C. has a detrimental effect on the cane.

Dr. Edgerton stated that the cause of the high increase in germination of cane treated with hot water is a question which will be worked on later. Then he took up the red rot problem. "Susceptibility of cane varieties to red rot is one of the most important, if not the most important problem at the present time. During the past years we have tested the resistance of various varieties and we will not recommend a variety that shows any great susceptibility to red rot. Sugarcane is grouped into three groups: resistant, susceptible, and medium."

Mr. Nelson: "Would it be possible to get suggestions or recommendations for a practical method for treating with hot water on large scale on the plantations?"

Dr. Edgerton: "That will become largely a problem of mechanical engineers to figure our equipment, methods, etc."

Mr. Bourgeoise: "How much time elapsed between the time the cane was taken out of the water and the time it was planted? What would be the margin of safety in planting on a large scale?"

Mr. Dunckelman: As I recall, the longest time lapse in my experiments was four hours.

Dr. Edgerton: The cane should be planted while it is still moist.

Mr. B. Thibaut asked why cane was being used in the experiments which is not in commercial use.

Dr. Edgerton replied that at the time the experiments were begun, those were the canes in commercial use. The experiments were started with 29/320 and it was the desire to have five years' experiments on the same cane.

Mr. Dunckelman reminded that 29/320 and 28/19 were both very susceptible to chlorotic streak at the time the experiments were started.

Mr. Munson called on Dr. Simmons for a report on his fertilizer work.

Dr. Simmons stated that he had very little that he could report thus far. He stated that what looks all right at present in the field might not stand up under harvesting and milling tests. He listed the test plots and briefly described their design. He also stated that he hoped to get a record of the representative soil types on the basis of soil analysis, and to try to correlate field tests with soil analyses.

Mr. Simon discussed the Johnson grass problem and mentioned two methods that are being tried: mechanical implements and spot control (spraying).

Mr. Bourgeoise discussed the "Tiger Man", a mechanical device which sifts the soil out of the roots and leaves the roots on top of the ground. He stated that it looks promising and will be discussed in detail later.

Mr. Munson called on Dr. Edgerton to discuss the alligator weed. Dr. Edgerton gave a brief history of its introduction and spread in Louisiana and explained the characteristics which make it spread so rapidly and cause it to be so difficult to eradicate. He explained that all the ordinary weed-killing materials have been tried, and only one seems to have importance. It is one of the so-called "hormone" substances. Such substances do not kill the plant immediately but are taken up by the plant. Although there are still a number of things to be found out about 2-4-D, it has definite possibilities with alligator weed and water hyacinth. It is now being tried out in the rice fields, and although it was not applied early enough it is doing a pretty good job. "We have small plots on the Station and also plots in the field. At present we are working with the engineers to get a machine to be used in the cane fields. If a machine is worked out which will straddle the rows in the cane fields, it may be possible to cut down the alligator weed growth considerably."

This completed the Contact Committee reports, and Mr. Munson now turned the meeting over to the Industrial Committee for the discussion of the milling of new varieties. The Industrial Committee is interested in getting one test made by the University Sugar House which will simulate large mill operations.

Mr. Taggart suggested that the discussions start with the "mill men" so it can be learned just what tests they want made.

Mr. Yarbrough: One of the main problems is maximum extraction versus boiling house capacity. We want to know the effect of varieties on possible capacities of the mill. The characteristics of a cane may increase or decrease the efficiency of a mill. Of secondary importance is the ability to handle the cane on the conductors. The fiber of the cane is to be considered. The ability of factories to take the sugar out of the cane is just as important as the sucrose content of that cane. This must be considered in relation to varieties.

Mr. Ethridge: Will there be enough 36/105 this year to spare to run tests on a big mill? My impression is there will not be. One hour of grinding or 100 tons should be ground to be of value. I believe with one test we can get a very good indication of what the cane will do. Extraction of juice and capacity is what we are most interested in. I personally would be interested in a test here at the University which could be done with relatively small tonnage—maybe a two-year test which would give pretty accurate information on juice extraction. I doubt about information on clarification. I would like to have mill setting, hydraulic pressure, and fiber analysis. These three things would throw some light on what mill capacity can be expected.

Mr. Taggart: Would you use dry mill tests or maceration?

Mr. Ethridge: I have no confidence in dry mill tests.

Mr. Yarbrough: What variety would you consider standard for comparison?

Mr. Ethridge: Personally, I would prefer to use 290.

Mr. Yarbrough described an unfortunate experience that he had with milling 34/120. The suggestion is made that two cooperators be obtained to try to determine the millability of the various canes released.

Dr. Keller: The results that we obtain here will merely give you an indication of the results you will get —is an idea of what to expect. One of the drawbacks is that it is hard to get accurate weights. If you wait until there is enough cane to run a big mill test the cane will already have been grown on such a large scale that it won't make any difference anyway what results the tests give. I think 40 tons would be enough to break down into two runs.

Mr. Legendre: I am of the opinion that a test run by the mill would be a very good guide for us. We should be acquainted with the milling characteristics of any new variety and know in advance just what a cane can do. It is up to us to know our own mill and be able to make adjustments to handle a variety after these tests have been run.

Dean LaSalle discussed briefly what the College of Engineering and the Sugar School have to offer in the way of trained men and cooperation with the sugar industry, and he urged that the sugar industry call upon the L. S. U. Sugar School for men and the help that it needs. He emphasized that the sugar industry and the School of Engineering can assist each other.

The morning session came to a close.

* * * * *

In the afternoon session, the question of a milling test on C.P. 36/105 was freely discussed. The suggestion was made by Mr. Yarbrough to confine these tests to plant cane only was accepted. The Experiment Station was requested to look into the possibilities of building up enough of any variety which might be released, to conduct a milling test at the Audubon Factory. A committee consisting of J. J. Munson, Chairman of the Industrial Committee, and S. C. Munson, Chairman of the Contact Committee, Dr. Arthur Keller, and Mr. C. W. Stewart of the L. S. U. factory was appointed to meet and work out details of the milling test and in particular to consider an offer made by Mr. Yarbrough to conduct such a test at Youngsville. Mr. M. J. Voorhies was requested to arrange for a meeting of the above committee. A request to establish a secondary increase station on the East side of the river was brought up and granted, provided that the field be located on Uncle Sam Plantation.

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Sugar Statistics for First Seven Months of 1945

(*Official Release*)

The U. S. Department of Agriculture announced today that distribution of sugar by primary distributors in the United States during January-July, 1945, as compared with the corresponding period of 1944 was as follows:

	1945	1944
	(short tons, raw value)	
Refiners' raw sugar (Table 1)	3,543	6,008
Refiners' refined sugar (Table 2)	3,159,724	3,177,407
Beet sugar processors (Table 2)	572,634	630,095
Importers' direct-consumption sugar (Table 3)	269,389	297,816
Mainland cane mills' direct-consumption sugar (Table 4)	49,416	83,121
Total	4,054,706	4,194,447
Deliveries for export [1]	226,133	246,136
Distribution for consumption in Continental United States	3,828,573	3,948,311

The distribution of sugar for local consumption in Puerto Rico during January-July, 1945, was 80,170 tons and for the Territory of Hawaii, 45,279 tons (Table 5).

Stocks of sugar on hand July 31, were as follows:

	1945	1944
	(short tons, raw value)	
Refiners' raw [2]	250,757	507,975
Refiners' refined	115,826	158,335
Beet sugar processors	212,821	253,585
Importers' direct-consumption sugar	17,315	39,316
Mainland cane factories	7,421	12,443
Total	604,140	971,654

[1] Includes deliveries for liberated areas and lend-lease as well as for military relief, but excludes usage by U. S. Expeditionary Forces.
[2] Includes raw sugar not reported by refiners in Table 1 as of July 31, 1945, 41,807 tons; 1944, 38,080 tons.

Sugar Statistical Reports

Vol. 12, No. 1—January-July, 1945

Table 1
Raw Sugar: Refiners' stocks, receipts, meltings, and deliveries for direct-consumption for January-July 1945
(short tons, raw value)

Source of supply	Stocks Jan. 1, 1945	Receipts	Meltings	Deliveries for direct consumption	Stocks on July 31, 1945
Cuba	151,863	2,115,301	2,169,706	2,733	94,725
Hawaii	76,100	404,005	432,745	202	47,158
Puerto Rico	21,402	426,914	392,480	164	55,672
Philippines	84	0	0	84	0
Continental Cane	79,452	118,996	190,495	360	7,593
Virgin Islands	0	3,908	159	0	3,749
Other Countries	2,247	47,794	50,041	0	0
Miscellaneous (Sweepings, etc)	78	60	85	0	53
Total	331,226	3,116,978	3,235,711	3,543	208,950

Compiled from reports submitted by sugar refiners on Form SS-15A.

Table 2
Stocks, production, and deliveries of cane and beet sugar by United States refiners and Processors, January-July 1945
(short tons, raw value)

	Refiners[1]	Domestic Beet Factories
Stocks of refined, Jan. 1, 1945	63,093	747,739
Production	3,212,457	37,716
Deliveries	3,159,724	572,634[2]
Stocks of refined, July 31, 1945	115,826	212,821

Compiled from reports submitted on Forms SS-16A and SS-11C by the sugar refineries and beet sugar factories.
[1] The refineries' figures are converted to raw value by using the factor 1.076180 which is the ratio of melting of raw sugar to refined sugar produced during the years 1943 and 1944. This factor is under further consideration.
[2] Larger than actual deliveries by a small amount representing losses in reprocessing, etc.

Table 3
Stocks, receipts, and deliveries of direct-consumption sugar from specified areas, January-July 1945
(short tons, raw value)

Source of supply	Stocks on Jan. 1, 1945	Receipts	Deliveries or usage	Stocks on July 31, 1945
Cuba	7,705	193,582	196,942	4,345
Puerto Rico	0	85,417	72,447	12,970
Total	7,705	278,999	269,389	17,315

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Form SS-15B and SS-3.

Table 4

Mainland cane mills' stocks, production and deliveries, January-July 1945

(short tons, raw value)

Stocks on January 1, 1945	Production	DELIVERIES		Stocks on July 31, 1945
		For direct consumption	For further processing	
77,327	76,936	49,416	97,426	7,421

Table 5

Distribution of sugar for local consumption in Puerto Rico and the Territory of Hawaii January-July 1945

(short tons, raw value)

Puerto Rico	80,170
Hawaii	45,279

Refiners' Overtime Loading Charges Paid by CCC

CCC Letter No. 30 to Refiners of Cane Sugar in Continental United States

Subject: *Instructions Under Paragraph* 18 (E) *of Refiner Contract*

Refiners were instructed by CCC LETTER NO. 7 TO REFINERS OF CANE SUGAR IN CONTINENTAL UNITED STATES, dated February 24, 1944, to employ the necessary overtime labor to receive raw sugar delivered from ocean carriers and/or lighters and canal boats to their refineries whenever, in the opinion of the Refiner, such overtime labor employment would accomplish the most efficient use of ocean tonnage and harbor conveyances. The ending of the war removes the necessity for the employment of such overtime labor for the purpose stated. Therefore, CCC Letter No. 7 is hereby cancelled as of midnight August 23, 1945.

Effective 12:01 a. m. August 24, 1945, Commodity Credit Corporation (hereinafter called Commodity) will credit Refiners for overtime labor expenses incurred in receiving raw sugar delivered from ocean carriers in accordance with lines 80 and 81 of "Warshipsugar (Revised 8/1/43)" Charter Party in order to comply with the unloading instructions of War Shipping Administration. The charterer, under the Charter Party, may order the vessel to work overtime to avoid or minimize demurrage and the Refiner should continue to order such overtime whenever it appears that the overtime expenses would be less than the demurrage costs. Commodity will also credit the Refiner for such overtime labor expenses incurred by the Refiner in avoiding or minimizing demurrage costs.

Commodity recognizes that it is not always possible to determine accurately whether it is cheaper to work overtime rather than incur demurrage, and it will therefore allow a 10 per cent margin in its determination, when liquidating Refiners' Settlement Statements (Form CCC Sug. 12), as to whether good judgment was used in ordering overtime, unless Commodity determines that unusual circumstances prevented the anticipated saving in any particular instance.

Very truly yours,

EARL B. WILSON,
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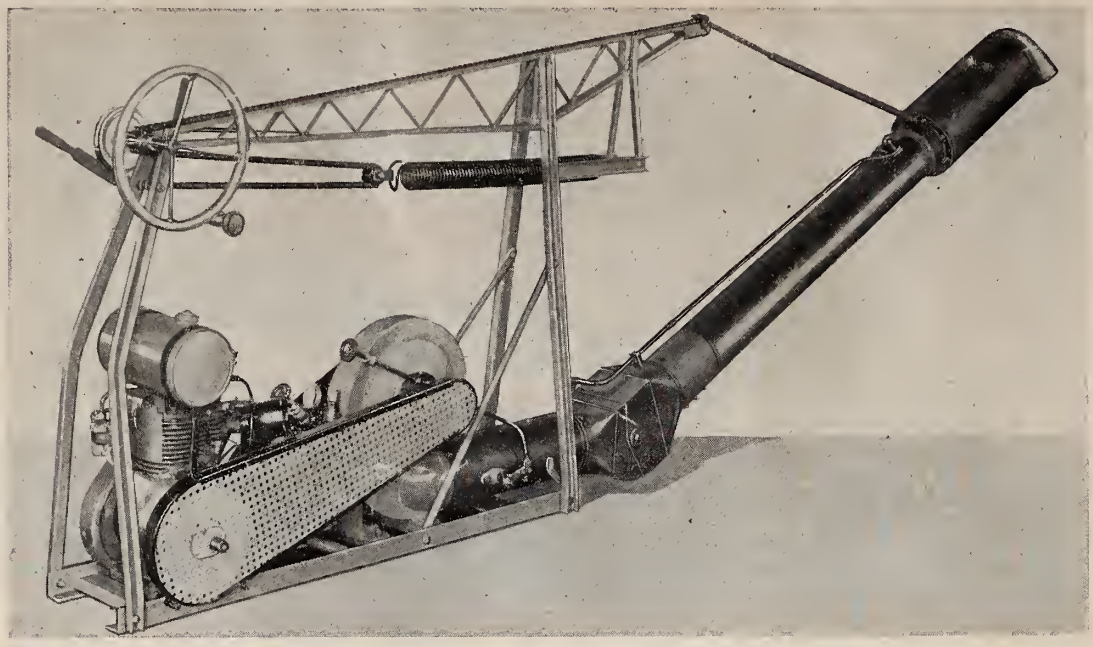

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